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Word import guide

iMac

Simon Jary
editor-in-chief

Apple must remember that 51 per cent of its software-downloading customers don't reside in North America

We're down loads

An iMac-owning friend recently bought an Iomega ZipCD drive for burning CDs. Despite Iomega's easy-to-use but very silly software-installation user interface, he just couldn't get Toast to see his new drive. After some basic OS-tweaking I did what I should have done right at the start – looked at the product box. There, in black-&-white were the damning words "Requires Mac OS 8.6 or later".

As the iMac was still running OS 8.5.1, I began the arduous task of downloading 8.6 from Apple's Web site. At a whopping 35MB, this took over two and a half hours. And then it wouldn't install because the iMac's firmware needed updating. First, I downloaded the North-American iMac firmware (700K) by mistake – no go. So, then I downloaded the 1MB International-English version. After sticking the necessary paperclip into the little-known programmer's button hole during a restart, I went back to the hefty 8.6 updater.

Three hours after beginning this whole sorry process, I was met with a dialogue box that told me that it was again no go. The International-English Mac OS 8.6 updater refused to go anywhere near the older British-English 8.5.1 system.

It was stalemate for my stalled mate, who was left with just two options – one of them illegal. He could 'borrow' a friend's Mac OS 8.6 CD, or he'd need to fork out £79 for an OS 9 CD. We should all attempt to keep up with Apple's system software. And £79 isn't so much to splash out every year to do so, is it?

Well, yes, it is. We'd all be horrified if we had to update our fridge, washing machine or toaster every 12 months. While a computer is something altogether more complex than the average kitchen appliance, it mustn't be forgotten that Apple is marketing its consumer iMacs in much the same way that Hotpoint, AEG and Philips try to flog us their white goods.

An iMac is purchased, set up in minutes and then becomes a pretty part of our home furnishing. Yet, ten months later, the average iMac owner has to call in the editor of *Macworld* to take over his phone line for three hours and stick a straightened-out paperclip in a strange place – only to find out that it's going to cost him the price of a EuroStar ticket just to get his £229 CD burner working.

No one said computing is easy... Hang on, Apple told us exactly that. The Mac's starting-up face doesn't wear glasses and a pocket protector. It's a smiling face that's happy it doesn't have to use either DOS or Windows. Macs don't look like your average office computers. Both Apple's software and hardware

instil confidence that computing really can be "for the rest of us". Every iMac advert has emphasized how simple it is to use an Apple computer.

It's no good making the iMac easy to configure if the software situation is so knotty. Last year, I defended Apple's decision to drop a few UK-English spellings in its interface menus and control panels. Apple convinced me that these linguistic lapses would enable us Brits, Aussies, Kiwis and South Africans to get the most up-to-date versions of the Mac OS at virtually the same time as the Yanks and Cannucks. The all-important dictionaries remained true to UK English, so even the loss of the Wastebasket was easy to put behind us.

But take a look at Apple's Software Downloads page on its Web site, and you'll notice that we haven't got much back for our spelling sacrifice. It took well over a month after the North-American-English version of ColorSync for us to get an International-English version.
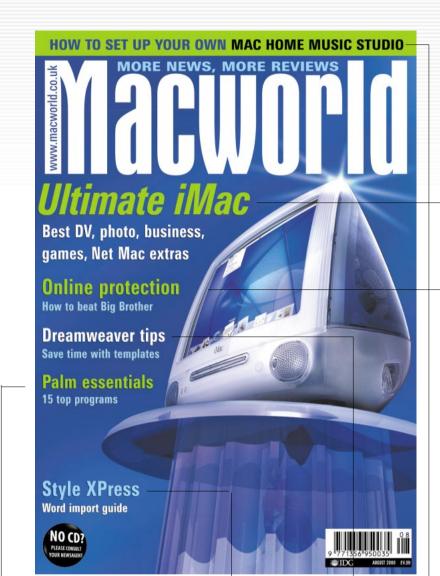
We've also had readers complaining that they can't use certain game demos and applications because their pre-OS 9 Macs don't have OpenGL installed. You guessed it – Apple's downloads page has OpenGL for North-American-English only, which has been available since November 1999.

The same goes for Apple's wonderful iMovie software. How we cheered when Apple showed some adventurously different thinking by offering iMovie as a free download to all of its FireWire-using customers. How we groaned when only the North-American version actually appeared. And that was way back in April, when Kevin Keegan was still a national hero.

It's really not good enough for Apple to tell UK users (and every other nation on Earth, bar those on the same continent as Steve Jobs) not to install the US updates when there is no alternative for playing many games and using modern 3D applications.

Apple is giving a very good impression of doing absolutely nothing to help those 51 per cent of its customers who aren't North American. Apple claims that over half of its sales are from "overseas" – that is, outside the US. So, surely, it's a highly risky strategy to ignore over half of its customers and concentrate on the 49 per cent of Macintosh users who live in the land of the free (download).

Come on, Apple. Get to grips with the international versions of your system software. Assign a couple more engineers to this area of your business where you're clearly failing us. We're losing our patience. Soon, you'll be losing customers. **MW**

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Your Star Letter wins a Palm IIIc, worth £349

We reward the best reader letter with this highly recommended Palm handheld computer – with colour display and Mac desktop organizer software. Its lithium-ion battery lasts more than two weeks with normal use, and recharges in your Mac-compatible HotSync cradle in minutes. Write to Letters, Macworld, 99 Gray's Inn Road, London WC1X 8UT. Or email letters@macworld.co.uk.

Subject: Save the iMac

Your recent article (Read me first, July 2000) asks for suggestions to save the iMac. It isn't by thinking similar. It will be thinking smarter.

The iMac is a great machine, but if Apple wants a home 17-inch monitor machine, then the see-through CRT Studio Display monitor is too bulky. It would need a flat screen with perhaps a pizza-box-like CPU. I hate to think how they could price it competitively, though. Most importantly, Apple needs to produce a truly small and lightweight portable computer (still running the Mac OS, of course!)

Andy Pritchard

Subject: Save the iMac

Apple should look at iMacs based on LCD screens – after all, both the 15-inch and Cinema Display are beautifully designed.

Andrew Hainault

Subject: Save the iMac

The beauty of the iMac is that it's a sealed single unit that sits neatly on a small desk. A bigger screen means a deeper footprint. A standard CRT 19-inch tube would push the keyboard off the desk – so what about the new bigger LCD screens? Think of the radical designs achievable if the guts of an iMac were redistributed underneath a flat-screen. Add a few see-through coloured plastic bits and – hey presto! – you've got yourself "Millennium iMac". Apple needs to think more Bang & Olfsen than Toys R Us to take the consumer market into its future.

David Hunt

Subject: Save the iMac

My Umax Apus Mac clone, running a 240MHz 603e with twin screens, is still useable – the British Lard Marketing Board Web site (**www.britishlard.co.uk**) was created with it. I bought it in mid-1997, when Apple didn't offer a comparable model for the price – except the horrible 4400. The problem with the iMac is I simply can't cope with only using one screen – too many palettes. The only alternative is a Power Mac G4. Although the £1,000 base price seems great, by the time you've added a proper amount of memory (256MB) and VAT, you've gone over £1,500. Apple needs an in-between machine – an iMac with no screen.

Tim Allen

Subject: Cinema Display

Apple's Cinema Display is beautiful, and I find it hard to work on any other screen now. There's no tiredness after hours of use, no glare or reflections, perfect colour and detail on every inch of the surface. Friends have sexual reactions when they see it (*steady on – ed*).

However, it does causes a few problems when software doesn't recognise its weird resolution. Games hate it – and when using DVDs, there's no way (other than nasty freeware that causes more trouble) to make use of the whole screen when running widescreen versions of films, or stop TV-format movies distorting. Calling it a Cinema Display is therefore rather ironic.

Francisco Negrin

Subject: "X marks the spot" column

If Mac OS X could run Windows software natively as David Fanning suggests (First Contact, July 2000), no publisher would

ever bother making Macintosh versions of anything.

Mac-specific features would vanish and we would be even worse off – stuck with Windows interfaces and feature sets.

The same applies to making OS X run on Intel iron. Wintel got so popular largely on cheap hardware. Most users are cheapskates. Since Apple makes its money from hardware sales, why should it torpedo itself by supporting cheap hardware it doesn't even sell?

David Converse

Subject: Whoa! Hold on a sec!

If Mac OS X could run windows apps, all we would get is windows apps. Nobody would write Mac software any more – and the Mac would slowly die. Remember IBM's OS/2?

Aaron Sommer

Subject: Going after windows

Don't you think it would be wise for Apple to wait until the DOJ finishes breaking up Microsoft

before trying to port Windows to the Mac? Right now, MS could hold back Office for Mac OS X and cripple any push into business. If Apple waits until MS is split in two, which seems likely to happen, it can go after Windows without risk of losing MS application support.

Alan Dail

Subject: Mac OS X Rules

If the new Mac OS is a hit, Bill Gates will clone the Aqua interface and 99 per cent of PC consumers won't notice the difference.

William Madden

Subject: X marks the spot
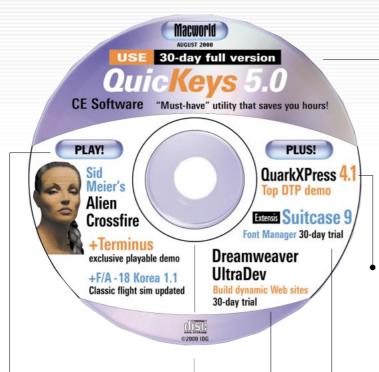
If we want to make OS X more like Windows so that PC users are more at home on the Mac, program some random 'general protection faults' and periodically give them a blue screen of death that kills only Windows apps, while leaving Mac OS X blissfully unscathed.

Larry Mills-Gahl

★ Star Letter: Your number's up ★

I agree with Simon Jary (Read me first, July 2000) that Apple must persuade IBM and Motorola to "play the megahertz numbers game" in order to play public catch-up with Intel in the processor stakes. Wander into any high-street computer store, and you'll see 700MHz Windows PCs selling for as little as £999. Of course, the 400MHz iMac DV offers a whole lot more, and its G3 chip is actually faster than that 700MHz Pentium III – but most people just aren't going to understand such claims.

It's not just the iMac that runs the risk of looking weedy in comparison to the beige brigade. The G4 Power Macs can muster a mere 500MHz rating. Before the end of the year, Intel has promised to ship newly architectured Pentium 4 processors that start at an amazing 1.4GHz. And Intel claims the P4 will rise by jumps of 100MHz a pop.

While Apple should concentrate on a knockout Mac OS X user-experience and the best-looking computers in the world, its PowerPC partners must latch onto the fact that potential customers understand speed in terms of numbers, not complicated BYTEmark integer tests or MacBench scores. I know that Apple Macs are premium quality, but a little bit of 'more for less' would really help shift those translucent beauties.

Robin Neald

This month's CD boasts 30-day trials of QuicKeys 5, Suitcase 9, Portfolio 5 and Dreamweaver UltraDev, plus a useable demo of QuarkXPress 4.1 and three superb game demos. Vic Lennard opens all the folders...

MAIN ITEMS ▼

QuicKeys 5.0

QuicKeys 5.0 is the latest version in the family of Mac-automation software. This 30-day trial boasts all the new features including full Mac OS 9 compatibility (including Multiple Users), multiple tab toolbars for ease-of-use, shortcut triggers through voice recognition, Toolbar Settings for easier toolbar creation, and longer shortcut names. Also included is an in-built screensaver and computer lock-out, plus a wider variety of shortcuts that can be created via the Setup Assistant.

QuarkXPress 4.1 Passport

QuarkXPress Passport 4.1 is the latest version of the DTP application and includes improved support for PDF, scripting, and Internet publishing. A new feature is QuarkLink, which lets you communicate with Quark from within QuarkXPress via a Web-based link for industry information, Macworld Daily News, and technical support. The demo is a full-working copy, but all output will have "QuarkXPress Demo" printed on it, printouts are limited to a maximum of five pages, and the Save, Save as, Save Page as EPS, New -> Library, and Collect for Output commands are disabled. Requires Apple's Disk Copy to mount the CD image.

Alien Crossfire

Smash follow-up to Sid Meier's Alpha Centauri. Playable demo.

Terminus

Macworld exclusive playable demo of this space blast-'em-up.

F/A-18 Korea 1.1

Playable demo of the latest version of this excellent flyer.

Dreamweaver UltraDev

Designed specifically for application development, Macromedia Dreamweaver UltraDev is a brand-new product based on the Dreamweaver core architecture. If you already use Macromedia Dreamweaver, you will appreciate the familiar interface and working environment. If you are currently developing Web applications by hand or with another solution, you'll find that Dreamweaver UltraDev makes it faster and easier to get your work done. Full 30-day trial on the CD.

Suitcase 9

Extensis Suitcase 9 continues to provide speed, stability and compatibility with current operating systems. Systems run faster and crash less when fonts are managed and activated only when they are needed. Suitcase 9 also provides powerful font previews, so no matter how you prefer to see your fonts, Suitcase can help you make the right font selection. Includes a new, intuitive interface. Try the full package for 30 days. *page 14* ►

Cover CD AUGUST 2000

MAIN ITEMS ▼ [CONTINUED]

Portfolio 5

Extensis Portfolio – the media catalogue and digital-asset-management program. Organize, view, select and share digital content across networks and platforms. Distribute images, sounds, movies and graphical documents. Portfolio can catalogue and automatically create thumbnails for the most popular file formats, including all common bitmap formats, vector art, sound files, movie files, presentations – and built-in translators automatically create thumbnails of the most popular file types. Plus, multi-page previews display all the pages of a multiple-page document. Try in its entirety for 30 days.

SERIOUS SOFTWARE ▼

INSIDE MACWORLD ▼

Our Serious Software folder also hosts Black & Bleu 2.0w and Cast Off 1.0 from Product News.

CD CATALOGUE ▼

Courtesy of Mark Pirri's superb DiskTracker program, Macworld brings you a searchable catalogue of all our CDs from 1997 to 2000 – over 180,000 files! This will grow month by month to allow you to find any file you want, without wearing out your CD-ROM drive. The latest version of DiskTracker (2.0.2) is also included – don't forget to register if you find our library useful.

GrooveMaker 2

GrooveMaker is the revolutionary music software for creating hypnotic, non-stop professional dance tracks. It puts you in controls of the music – it's your mix, and it all happens in real-time. Just pick a drum groove, layer on some loops and change the tempo – the music never stops. Separate volume, pan, solo and mute controls are at your disposal, giving you an intuitive environment to create stunning grooves.

Double-click on the installer. Once installed, double-click on 'Magnetic (Trance) Demo' to extract the demo song, then fire up the demo. A tutorial is available within GrooveMaker; click on 'T' in the bottom-right panel. Demo is save-disabled.
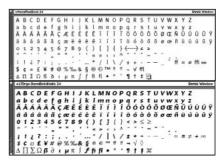
VSE Be Found 1.7.1

If your site is not getting as many visitors as it should, it is probably not ranked well on the Internet search engines. Since most Web surfers find Web pages by using search engines, a high ranking is as good as a full-page ad in *Yellow Pages*.

VSE Be Found helps you obtain a good listing in the most important search engines. It finds the right keywords for your Web pages, creates the right META tags, uploads your pages to your server and automatically submits them to the most important search engines. It also gives individual tips on how to improve your ranking.

The demo version is save-disabled and only submits to Altavista.com.

PopChar Pro 2.1

Tired of searching for special characters with Key Caps? Want to get the most out of your fonts? Then PopChar Pro is the right tool for you. It makes the typing of unusual characters easy without having to remember keyboard combinations. The installed menu automatically detects the current font in most applications (including MSWord, Excel, PowerPoint, Framemaker, Adobe Illustrator) and shows all available characters. Any character can be inserted in the current document by simply selecting it.

Fire up the installer and leave the License key blank. This will give you a 21-day fully-functional trial version.

Cover CD AUGUST 2000

GAMES WORLD

Terminus

Terminus takes place across our Solar System 200 years in the future. Space colonization has just begun and both Earth and Mars enjoy unprecedented prosperity. Then ancient alien technology is discovered that allows instantaneous travel among far-flung destinations, and the course of human history is changed forever.

The demo contains a series of training missions that teach gamers the basics of Newtonian aviation, a one-person gauntlet that hurls wave upon wave of enemy ships at the pilot, and one solo mission from the game's campaign.

Requires a 300MHz G3 or better with 96MB available RAM and at least Mac OS 8.6, OpenGL 1.1.2 and Game Sprockets 1.7.
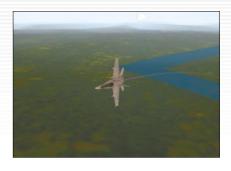
Alien Crossfire

Alien Crossfire is the encore to the Alpha Centauri masterpiece! 2260 AD. Alien civil war threatens Alpha Centauri as mankind struggles to colonize an alien planet. Upheaval looms as two ruthless alien factions and the original inhabitants of Alpha Centauri do battle in the skies above humanity's new home. As survivors of the alien war fall to the surface, human factions must choose whether to band together to fight the offworlders, or form alliances with the alien factions as a means of preserving mankind. Diplomacy or war? The future of the planet is in your hands. Do you have what it takes to survive?

Requires a 180MHz PowerPC 603e or better with 32MB available RAM.

F/A-18 Korea 1.1

F/A-18 Korea Gold combines all the realism and excitement of F/A-18 Hornet 3.0's award-winning simulation technology with a new Korean theatre, advanced new features such as 3dfx and OpenGL hardware acceleration, and an intuitive mission creator/editor. The demo has a single mission and no network play.

New features for the Gold version include texture-mapped graphics using ATI Rage (and other OpenGL) graphics accelerators, support for 3dfx Voodoo 3 graphics acceleration, and compatibility with USB input devices via Apple's InputSprocket.

Requires Mac OS 8 (3dfx Voodoo) or Mac OS 9 (OpenGL) and 32MB available RAM.

ALSO ON THE CD

COMMS & INTERNET
28 applications including:
DupliMizer 1.5
META Maker v2.0
Outlook Email Archive 1.6

EDUCATION
Three programs including:
MacTypingTutor 4.7.5
The WordsCrosser

FONTS
Fontastic Font Viewer
FontBuddy 2.0

GRAPHICS
11 items including:

PixelToy 2.1
Rainbow Painter1.9.1

ICON UTILITIES
iControl 1.1.1

INFO
Six items including:
1984 Online issue 25
ATPM 6.06
plus seven utilities for developers

MATHS & SCIENCE
Four programs including:
MathMagic v1.2
The Atomic Mac 4.0

NETWORK
OT Advanced Tuner

PALM PILOT
Mac Palm Doc 2.0.5

SOUND & MUSIC
13 applications including:
Amadeus II v2.36
BayTex Party! Pro 2.5

UTILITIES
12 categories comprising over 80 useful tools for your Mac including:
ABF Attributes 1.5
ABF Rename 3.1.1
Drag'nBack 3.3.2
DropZipper 1.0
File Buddy 5.3.7
MacDICT 1.3.9
Matrix Screensaver 1.6

Play it Cool 3.4
Tex-Edit Plus 3.0.2
TextBroom 2.5.0
TextSpresso 1.6.2
Window Manager 2.2

UPDATERS
This month's dedicated updaters folder includes over 90MB of patches to bring many popular applications bang up-to-date, including:
4th Dimension 6.5.6
Amapi3D 5.15
CADtools 2.1.3
Eudora 4.32
FAXstf 5.1.1 & 6
FlightCheck v3.84
FreeHand 9.0.1
MarkzScout 1.2
MarkzTools III v7.99
PM2Q XT 5.92
Norton AntiVirus 5 & 6
ProJPEG 4.0.1
REALbasic 2.1.2
SoundJam MP v2.1
Virex (06/00)
Z-Write 1.1

DON'T MISS…

■ Cool Extras
Anagrams – Up-to-date word munger!
AutoPurge – Solve Mac OS 9's temporary folder problem.
SIG – Have fun with the Shakespearean Insult Generator.
Cat/Dog – Latest versions of the Mac's virtual pets.

■ Mac ISPs
Internet access offers from AppleOnline, easyspace & FreeUK.

■ Plus…
… many thanks to Simon Youngjohns for our CD icons.

SHAREWARE

Shareware is a distribution method, not a type of software. It makes fitting your needs easier, as you can try before you buy. Shareware has the ultimate money-back guarantee – if you don't use the product, you don't pay for it. If you try a Shareware program and continue using it, you are expected to register. Support shareware authors so that they continue to provide high-quality programs for the Mac.

Brits still waiting for key

Apple techs: OpenGL, FireWire, AirPort

Latest software downloads denied

to UK Macs

International-English Mac OS trails North American-English

Despite last year's moves by Apple to speed up its International-English Mac OS updaters, key technologies downloadable by US users are unavailable to UK users, as well as those from Australia, New Zealand and South Africa.

Apple claims it attempts to release local-language updates as early as possible after the release of the North-American-English versions. However, at the time of writing, International-English versions of ColorSync and OpenGL were trailing their US counterparts by many months.

ColorSync is Apple's system-level software that enables users to professionally manage the colour of documents and devices. ColorSync ships with Heidelberg, Kodak and Agfa technologies. Companies such as Pantone, Hewlett-Packard, Scitex, Imation, Barco, and Tektronix also support ColorSync. It's one of the main reasons for Apple's healthy lead over Windows in the professional pre-press and publishing industries.

ColorSync 3 is built into Mac OS 9, but the latest updater – which takes the software to version 3.0.1 – has only just become available for International-English users. This update fixes many bugs in version 3.0 – including yellow monitors, disappearing profiles and unopenable CMYK files. See our review in the July issue of *Macworld*. 3.0.1 was available for French, German, Italian, Swedish, Spanish and Japanese language versions of the Mac OS weeks before an International-English version appeared.

Last year, Apple caused a storm of protest when it cut several UK-English spellings from the Mac OS interface. While UK dictionaries remained, the interface (menu bars, dialogue boxes, Control Panels, etc) spell 'colour' as 'color', 'favourite' as 'favorite' and 'Help Centre' as 'Help Center'.

At the time, Apple claimed that the unpopular move would mean faster hardware introductions and allow easier software updating.

"By switching the British OS to International-English, we reduce costs and ship the latest versions faster," explained Peter Lowe, Apple's director of Mac OS worldwide product marketing.

Apple defines International-English as that spoken outside of the US. Its UK dictionaries therefore apply to Brits, Aussies, Kiwis and South Africans, as well as users from the many other Commonwealth countries that have not adopted US spellings. Canadians, who in general use British-English spellings, are saved the delays, as Apple forces them to use the North-American-English version of the Mac OS.

Open and shut cases
Aside from delays with ColorSync, another key Apple technology currently denied as a download to non-US Macintosh users is OpenGL – the industry's most widely used and supported 2D and 3D graphics application programming interface (API). OpenGL lets Macs display accelerated three-dimensional graphics using the leading 3D and 3D-enabled applications. Apple says that "OpenGL for Macintosh will do for games what

the invention of gunpowder did for warfare. In effect, it changes the rules of the game to make Mac gaming titles more real, more powerful, and more fun."

It is also instrumental in 3D modellers, such as Strata 3D and Maya 3.0 – Alias|Wavefront has recently announced that it is to port this top 3D program to Mac OS X (see News, July 2000). OpenGL.org (**www.opengl.org/Products/Applications/MacApps.html**) lists 70 programs that require OpenGL.

Apple made a big noise about its adoption of OpenGL when it dumped its proprietary QuickDraw 3D technology in favour of the PC standard, telling its users: "Now it's your turn to benefit from the photo-realistic power of OpenGL. After all, why should those serious scientific professionals have all the fun?"

Many of the leading Mac games (including Quake 3, Star Wars Episode 1: Racer, and Tomb Raider: The Last Revelation, which is reviewed in this issue) require OpenGL.

Apple warns on install dangers
Stuart Mackenzie, Apple's executive relations specialist, told *Macworld*: "As regards to the update for OpenGL, the only update we currently have is for English-North American systems, which is not recommendable for local systems."

Reader reports indicate that the North-American installation of OpenGL upgrades may work with foreign language versions of the Mac OS. However, Apple UK sources warn that this solution to the lack of International-English versions may cause system "degradation", and could open the gates to "serious system damage".

In order to stop UK and other international customers causing potential damage to their systems, Apple is adding special tags to make installing North-American versions impossible.

OpenGL is built into Mac OS 9. But, for those users unwilling to pay the £59 upgrade or risk software incompatibilities, there is no option to move to the 3D standard. In the US and Canada, Macintosh users

have been able to download the OpenGL 1.1.2 upgrade since November 1999.
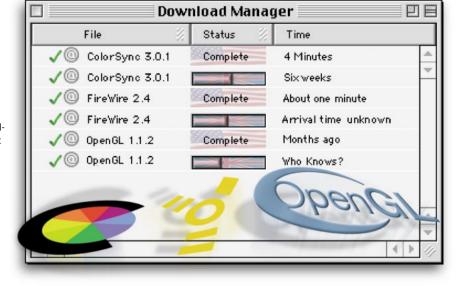
Another top-level Apple technology that International-English Mac users were waiting for when *Macworld* went to press is the latest version of the company's AirPort wireless-networking solution. AirPort 1.2 provides enhanced performance, compatibility, stability, and functionality, as well as including the complete software base-station feature that now supports closed networks.

Apple is also pushing its own high-speed connectivity technology, FireWire. However, the International-English FireWire 2.3.3 update appeared a full 14 days after the more advanced NA-English FireWire 2.4. According to Apple, FireWire 2.4 fixes three problems that "may be experienced by customers who are presently using FireWire 2.3.3 or an earlier version". Performance is improved for very fast FireWire disks; a bug is fixed where unplugging a DV camera while running iMovie in certain situations caused a crash; and compatibility with some third-party devices has been improved.

Firmware hard to find
Firmware updaters upgrade the software that is held in permanent silicon memory. A Mac's ROM gives the computer its initial instructions when starting up. These essential programs remain even when the system is turned off. Occasionally, Apple updates these firmware instructions – most recently in June for all its entire range. The iMac Firmware Update 2.4, for instance, allows a FireWire mass-storage device to be used as the startup disk. At the time of going to press, International-English versions were unavailable.

It isn't all bad news for International-English users. June saw the eventual release of ColorSync 3.0.1 (after several attempts) and USB Printer Sharing 1.0 (on the very

same day as its American cousin), as well as updates for AppleWorks (6.0.4) and Final Cut Pro (1.2.5).

Apple argues that it has to prioritize its software developments, but is hoping to clear-up the confusion over the lack of OpenGL as a software download, despite its presence as part of the International-English Mac OS 9.

Apple is also looking into changing the design of its software download pages (**http://asu.info.apple.com**). This, it hopes, will make international updates easier to locate, and less easy to confuse with their North-American counterparts.

In the meantime, go to Macworld Online (**www.macworld.co.uk/updates**) for the latest information on International-English updaters of Apple software and firmware. Our Product News pages also list the latest Apple updates and the principal third-party software updaters that are included on *Macworld*'s cover-mounted CD each month. **MW**

Read Simon Jary's opinion on page 4.

Jobs promises Mac Java will be 'best on planet'

Apple CEO, Steve Jobs, surprised June's Java One conference when he made an appearance on stage with Sun Microsystems CEO, Scott McNealy. McNealy called Jobs one of his "personal heroes".

Jobs announced that Apple was now "totally committed to Sun's Java technology". Apple intends bundling a QuickTime-supporting Java 2 platform Standard Edition (J2SE) with every copy of Mac OS X, due next January. "We will offer the best Java platform on the planet right out of the box," Jobs said.

Java jokers
Jobs and McNealy admitted that the two companies hadn't worked

closely together in the past: "That's your fault," quipped McNealy.

"You were busy putting Java into light bulbs," Jobs replied.

"I know some of you (in the audience) have not been thrilled with Java on the Mac," Jobs said. "We've finally figured out how to work with each other."

Mac OS X loves Java
Jobs called Apple vice-president of software Avie Tevanian on stage for a repeat of his Worldwide Developers Conference WebObjects demonstration, where he used Apple's Web-production software to create a Java client application with full Aqua interface features.

McNealy, Jobs and Tevanian share a joke at the the fifth annual Java One Conference in San Francisco.

Java developers responded with enthusiastic applause.

McNealy cited figures from IDC analysts, saying there are more than 2.5 million Java developers, and that that number is expected to rise to 4m by 2003. There were 20m Java smart cards shipped last year, with 100m due this year and 250m the year after, he added. **MW**

"Sun was too busy putting Java into light bulbs" – Steve Jobs on why Apple and Sun hadn't worked close enough together in the past

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QuickTime's Real deal

The Internet-streaming-media group RealNetworks launched the first European Real Conference at Disneyland, Paris, with the announcement that it will deliver streaming VHS-quality video to European consumers via RealSystem 8. It is also to add support for many more formats, such as MP3 and Apple's QuickTime.

Martin Plaehn, senior vice president of media systems for RealNetworks, said that RealSystem's extensible architecture – combined with RealNetwork's and Apple's dedication to support industry standards – meant support for QuickTime was achieved easily and quickly once the licence for QuickTime had been agreed. RealSystem and QuickTime are both built on the RTSF transport protocol standard, while Microsoft's MediaPlayer is built on Microsoft's own proprietary protocol.

QuickTime movies can now be viewed via RealPlayer, the number-one streaming-media player – assuring a much-larger audience for QuickTime content creators. The licensing deal was initiated by RealNetworks, following multiple requests by content producers from educational and business establishments – in a bid to consolidate and meet their needs for streaming-media content.

Steve's surprise

When RealNetworks CEO Rob Glaser first announced the agreement during a keynote at the Streaming Media East 2000 conference in New York, Apple CEO Steve Jobs told attendees that he was surprised when Glaser suggested the deal. "But after thinking about it, it made sense," Jobs said. "We want QuickTime everywhere. The more servers it runs on, the better."

Glaser opened the conference with a keynote covering the agreements made with broadband networks to collaborate in the delivery of higher-bandwidth audio and video to consumers in Europe. Full-screen, near-DVD quality streaming video was demonstrated in RealPlayer 8 at 1Mbps – a massive improvement in picture quality over previous versions. This download speed should be available commercially via ADSL for UK Macs later this year.

Media rich

While boosting video quality, RealSystem8 has also moved in QuickTime's direction by incorporating new media types, including MP3, Macromedia Flash 4, and HTML, as well as RichFX, a 3D-video format.

Improvements to RealSystems were not limited to broadband. Narrowband streaming has also improved enormously with better sound and video quality.

A wider range of local content is also available to European users through RealPlayer, with local Web-based RealGuides now available in each country.

RealPlayer has 48 million users outside the US. 26 million of these are in Europe – ten times the figure two years ago. There are currently 4.5 million registered UK users of RealPlayer.

Dave Richards, vice president of consumer products, confirmed that RealJukeBox – which lets users sample and playback music on the Internet – will become available for the Mac in the second half of this year.

Broadband-content trials using RealSystem are also underway, with European service providers including British Telecom, Freeserve and SkyStream Networks.
Gillian Thompson   MW

DAVID BOWIE AT GLASTONBURY – PHOTOGRAPHED BY ANNE COOK

Glastonbury goes Macintosh techno, with QuickTime webcasts

Macs on the rack
Content was edited on the fly, and compressed into different formats for three types of stream (56K, 100K and 300K). Material was ISDN'd from site to the server set-up.

Apple's QuickTime technology was used to deliver live, Internet streams from this year's Glastonbury Festival. The broadcasts were available via the official Glastonbury Web site (**www.glastonburyfestivals.co.uk**) and were delivered in partnership with Playlouder.com (**www.playlouder.com**). No mud was involved.

Ben Challis, from Glastonbury's television broadcasting dept, told *Macworld*: "We chose Apple because it provides the highest quality software."

Streaming Europe's largest festival of the performing arts was not without problems, however. Simon Waterfall, creative director, said: "The event went very well, apart from two power cuts in the first 20 minutes of streaming – Glastonbury ran out of diesel." The streams were fed from a combination of roving camera teams, a crew at the New Bands tent, and the main BBC feed from the "Other Stage".

Euro popular

Playlouder's Paul Hitchman told *Macworld*: "We broadcast eight hours of continuous programming a day over three days. We showed 29 bands on three stages.

It was one of the biggest and most comprehensive webcasts in European history." Over two million streams were broadcast over the festival weekend to an international audience; edited highlights from the event are now available on playlouder's Web site.   MW
Jonny Evans

Office 2001: Mac first

Microsoft has unveiled more of its new Macintosh-exclusive features for the upcoming release of Office 2001 Macintosh Edition. Currently in beta testing, the Macintosh desktop applications suite is scheduled to ship in the second half of this year. It will contain features that have never been seen before in Office 2000 for Windows. Compatibility and ease-of-use was at the forefront of Microsoft's mind while developing Office 2001, said Irving Kwong, product manager at Microsoft's Macintosh Business Unit. "Office's new features and tools will enable functionality among users of different experience levels and make usage a breeze," he said.

The Office 2001 suite will contain word-processor MS Word, spreadsheet Excel, presentation software PowerPoint and a new mail client and PIM (personal information manager) called Entourage 2001. Entourage was previously known by its codename "Alpaca" (see *Macworld*, June and July 2000). The software will also feature a new Project Manager, a centralized location that will offer users access to most Office functions. On offer are 400 customizable templates and wizards, a dramatic improvement over the 150 that were part of the Office 98 Mac edition.

Office 2001's new formatting palette is a floating window that will consolidate all the tools used to format any Office document. "Instead of going through menu after menu, the formatting palette will offer users single-click access to document formatting," Kwong said.

Known as Mail Merge in **Word 98**, the new Data Merge Manager in Word 2001 will simplify the process of collecting, merging and then mailing or emailing the data, all in a single interface.

Excel 2001 will incorporate enhanced list management, by converting the spreadsheet cells into manageable data lists. These will make them easier to sort, filter and organize. Excel will also have a calculator and an auto-complete feature that will help populate the cells quicker.

PowerPoint 2001 introduces a new tri-pane interface, giving users access to the slide, outline and notes views all in a single window. "The tri-pane view will enable better editing capabilities and quick transition between slides," said Kwong. In addition to allowing the creation of presentations with new-media formats, PowerPoint 2001 will allow users to save presentations in Apple's QuickTime format.

Office 2001's email and PIM software will feature support for Palm handhelds, according to Kwong: "Users will be able to sync their data with Palm handhelds." However, Office 2001 will not feature support for synchronizing data with Microsoft's Pocket PC, the rival to Palm's handheld devices.

Kwong claimed the new additions to Office 2001 were purely for the Macintosh, and that "if the Windows developers of Office liked the new features, they could pick them up."

Past mistakes

During the development of Office 2001, it was important to keep the needs of Macintosh users in mind because of their fierce loyalty to the platform and its interface, according to Kwong.

He referred to Microsoft's experience with Word 6 for Mac and its subsequent failure.

"Macintosh users didn't like the fact that Word 6 for Mac looked and felt like its Windows counterpart. No wonder it failed."
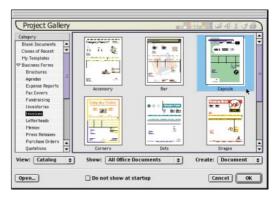
Rob Enderle, senior industry analyst at Giga Information Group, saw no ulterior motive behind Microsoft's move in first introducing new features in the Macintosh version of Office, as opposed to one running on the company's own Windows OS.

Its quick response to customer demands required Microsoft's Mac development group to be more innovative than the Windows development group for Office, claimed Enderle.

He added: "In fact, Microsoft's Windows and Macintosh development units of Office are independent of each other. They have different agendas, are physically separated and share very little code between them."

Microsoft will ship software to support Apple's upcoming OS X operating system, according to Mary Rose Becker, product manager at Microsoft's Mac Business Unit. Office for OS X should ship in the middle of 2001, while Microsoft's Web browser Internet Explorer version 5.5 for OS X will appear in the second half of 2001, she added. **MW**

Agam Shah

Office 2001 introduces the Project Gallery, a task-based starting point that is common to each application. The Project helps people select the most appropriate design to match a project's needs before deciding which application to use – as any Office application or template may be launched from the Project Gallery.

The Image Effects features – available throughout Office 2001 – provide editing tools to correct and enhance pictures easily, including red-eye reduction, scratch removal, automatic colour correction and image rotation, as well as Painter-like Picture Effects filters that can make a photograph look like a charcoal drawing or a mosaic painting. These are to be found in the newly designed Picture toolbar.

When you begin a list, Excel 2001 automatically offers to convert the data into a common list format. AutoFilters are automatically created from the list headers to help sort the data. Microsoft claims that you'll no longer have to worry about list headers that disappear as a list is scrolled on a monitor or printed. List headers in Excel 2001 remain at the top of the page as you scroll a down a list or print a multiple page list.

Exclusive peek at future Mac games

Gathering of Developers – the game-producers' organization – hit London in June, with three forthcoming Mac games – Rune, Heavy Metal F.A.K.K. 2 and 4x4 Evolution – demoed exclusively for *Macworld*.

Rune is set in violent world built on Norse legend. You play Ragnar the Viking, and you're soon up to your neck in bloody – but humourous – hand-to-hand combat. It's not a game for the faint-hearted – Ragnar can use the severed limbs of his opponents as weapons.

Ritual Entertainment is working on a game featuring characters from the movie *Heavy Metal*. The lead character in both movie and game is Julie Strain, an Amazon woman who makes Xena Warrior Princess look like a Girl Guide. The game aims to be a mix of shoot-em-up action, cunning Tomb-Raider-style puzzles and more blood than a vampires' tea party – see the screen-shots here. There's something for everyone in this game – especially teenage boys.

Racy in a different way is 4x4 Evolution, featuring a huge selection of sports utility vehicles across a variety of off-road circuits. The final version will allow full customization of vehicles, and even online trading of special models. The game will be available on Mac, PC and Sega Dreamcast platforms.

All the Gathering of Developer games will be published by Take 2 Interactive (www.take2games.com), who purchased 80 per cent of Gathering of Developers in May. Heavy Metal and 4x4 Evolution are expected at the end of September, Rune in October.
David Fanning

Microsoft's Bungie jump

Microsoft has acquired Bungie Software Products, developer of popular Mac games such as Myth and Marathon, as well as the greatly anticipated Halo. Bungie's development staff will become an independent studio within Microsoft's Game Division, where Microsoft said it will "retain its unique character and edgy personality".

Bungie will assist Microsoft in developing titles for the forthcoming Xbox game console.

The deal gives Microsoft exclusive publishing and distribution rights to most Bungie titles, including Halo, a keenly anticipated sci-fi action game. Take-Two Interactive Software, which distributes Bungie titles, has acquired the rights to Bungie's Myth series and Oni, another forthcoming action game. As part of the deal, Take-Two sold its 19.9 per cent equity stake in Bungie to Microsoft.

Bungie founders Alexander Seropian and Jason Jones explained the deal: "Bungie began as the two of us in a basement, duplicating 800K diskettes, shrink-wrapping Minotaur boxes by hand, and selling games at tradeshows and through a PO Box.

"What drove us then drives us now: to make the games we want to make, on our own terms, and in our own way.

"Holding true to this vision allowed us to create the Marathon and Myth series, and has now led us to Redmond to work closely with the Xbox development team. Oni will ship for the PC, Mac, and PlayStation2 later this year.

"Our goal has always been to create the best games, and make it fun for our fans and ourselves. Nothing about this deal changes that.

Marathon code goes free
Jason Jones, the programmer behind Marathon, Myth and Halo, released a GPL (General Public Licence) version of the source code to Marathon 2, shortly before Microsoft acquired Bungie. A GPL is a licence applied to software from the Free Software Foundation, which guarantees users the freedom to share the software and make changes to it. Now, die-hard Mac programmers are using the Marathon source code, and its game engine, to create software under the open-source agreement. More information about Marathon Open Source is available from **source.bungie.org**.

"At Microsoft we'll set up as the Bungie Studio – sort of a mini-company within Microsoft. It's our job to preserve our personality and culture. With the might of Microsoft's testing, distribution, and other vast resources we'll lead the way on Xbox while holding true to our original vision.

"We're diving into this with our eyes wide open. The last seven years have been a real blast. We hope you'll join us for the next seven, after which we'll blow up the world."

The dark side?
Anticipating criticism about the deal, Bungie also posted an FAQ that addressed users' likely concerns about Microsoft. "Part of what Microsoft is buying is Bungie's culture," the company said. "Bungie doesn't work if it doesn't maintain that culture. Many people will leave if Microsoft doesn't respect our values."

Bungie developers, not Microsoft, will decide which platforms to support in future games. They haven't decided whether to offer a Mac version of Halo – which Bungie previewed during Steve Jobs' keynote at Macworld Expo in January – they said they will not develop a version for Sony's PlayStation2 game console, which will compete with the Xbox. MW

Quark and Adobe's war of words

After last year's InDesign vs XPress battle, Adobe and Quark are set to lock horns again with competing text editors. Adobe has shown off a beta version of its new InCopy text-editing software for InDesign. Quark, meanwhile, has announced that it will offer a stand-alone version of QuarkCopyDesk, a word-processing program originally available as part of Quark Publishing System.

InCopy incorporates InDesign's text-processing features – including its hyphenation-&-justification engine – allowing writers and editors to compose and edit documents with the same line-endings and formatting that will appear in the final layout. It also includes workgroup collaboration features that allow other users to add notes or make changes to the copy.

InCopy in line

Demonstrating the software, Phillippe Erhart, Adobe's product manager for pro publishing, used InDesign to open a page layout for a newspaper. InCopy adds six plug-ins to InDesign, including one that exports stories, either by themselves or with headlines and other supporting elements.

After exporting a story, Erhart opened it in InCopy. The text editor's Layout view showed the entire newspaper page, with "X's" indicating stories that could not be edited. InCopy also provides a Galley view that displays the text in numbered lines, but with correct hyphenation and line endings. You can enlarge the text for easier reading and editing, without affecting the formatting in the page layout.

Any changes made to copy are highlighted in yellow, so another user can then choose to accept or reject the changes. The program displays warnings if edits make the copy go over or under the required line count. The electronic equivalent of sticky notes can be attached to the document.

InCopy includes full support for InDesign style sheets. If a document is created from scratch in InCopy, styles can be created and modified. However, style sheets in documents exported from InDesign cannot be modified.

Many InDesign users have complained about the lack of a built-in text-editing module analogous to PageMaker's Story Editor. Although Adobe has not announced plans to include a text editor in InDesign, InCopy's Galley view appears to have the features needed for a text-editing plug-in.

Adobe plans to ship the final English-language versions of InCopy in October.

CopyDesk job

QuarkCopyDesk – incorporating the text-processing features of QuarkXPress – allows writers and editors to compose and edit documents with the same line endings and formatting that appear in an XPress page-layout. Writers can thus account for hyphenation, kerning and other type characteristics before copy is flowed onto a page. CopyDesk SE will also include features to facilitate workgroup collaboration, such as print, galley and full-screen text views. Quark plans to release the software later this year, but did not announce pricing.

Quark said it plans to add XML support in a "subsequent release" and will also beef-up support for QuarkXTensions in the program.

Also at the show, Quark and callas software announced the latter's IPTCImportSXT XTensions module for Quark Digital Media System. The utility allows QuarkDMS to extract embedded International Press Telecommunications Council (IPTC) information from digital images. IPTC is a standard that allows photo libraries to embed a photographer's name and copyright directly into an image.

Stephen Beale

Total Publishing 2000

The Total Publishing 2000 show – which took place at Earls Court 2, London, June 21 – included the first-ever public briefing by Apple UK on Mac OS X.

"We invited a lot of our larger customers to the show to see the new OS, and the reaction was excellent," said a representative on Apple's stand (above right). Apple is promising a public beta-release of its new operating system at Macworld Expo, New York, in July – followed by a full release in January next year.

Tom Bradley, an IT manager at Salford College, was reserved, though. He says: "I am fond of the existing Mac interface. OS X does look good, and I'll be sure to try it, but I'm concerned that I may have to relearn a great deal."

The big three

Adobe, Macromedia and Quark all had a major presence at the show, with public displays of their publishing solutions attracting steady traffic throughout the event.

Bart van Stal, of Van Gennep, revealed that his company - like many third-party QuarkXTensions developers – intends developing plug-ins for Adobe InDesign.

Both Van Stal and Productivity Computer Solutions' (PCS) Bob Anscomb agreed that InDesign, while promising, has not yet managed to make a major impact on the magazine- and newspaper-publishing industry.

Anscomb said: "It comes down to cost. People are used to using QuarkXPress, they own XPress, their employees are Quark-trained. Moving across to InDesign means extra expense and investment in training."

PCS showed its cross-platform InDesign plug-in, InPulse, a system for managing advertising documents, graphics and text.

Smaller and better

Other highlights included demonstrations of JPEG2000 from LuraTech. This evolving standard can compress 4MB images to 27K, with little loss in quality. Wavelets smooth an image, avoiding the degradation caused an image is compressed using standard JPEG technology.

The sheer number of Macs in evidence at the show, and the number of Mac applications exhibited, confirm the platform's continued significance to the publishing world. The show's organizers are already promising to return to Earl's Court next year on June 11 and 12, 2001.

Jonny Evans

Apple sales rocket

Apple approached July's New York Macworld Expo with renewed confidence, as figures from market-researcher International Data Corporation (IDC) stressed its market strength.

IDC's statistics show Apple's overall UK PC market share grew by a stunning 46 per cent, from 2.7 to 3.5 per cent of the market over the same quarter last year. The sector grew 13 per cent overall during the period.

IDC UK's senior research analyst Andy Brown told *Macworld*: "2000 looks very positive for Apple. It's moving very strongly in Europe, especially in the education and consumer sector. From a design point of view, Apple is one of the leaders, and has a very strong core market."

He also praised Apple's European strategy, saying: "Apple is one of the few US vendors that seems to realize that Europe is made up of multiple countries, all with different languages, and different channels".

"The company is approaching different markets in a very intelligent and dynamic way."

Apple's share of the UK consumer desktop market grew by 63.7 per cent in the first quarter of this year, well over the industry average of 24.5 per cent. It is believed that Apple shipped as many as 23,000 consumer desktop iMacs in the period – 8,000 more than during the same quarter in 1999, where sales reached approximately 14,000. Apple holds 4.8 per cent market share in the consumer desktop space.

Education, education, education

Merrill Lynch analyst Steve Fortuna says that Apple's long-term sustainability partially depends on its reclaiming strength in the US education market. IDC's figures show Apple remains strong there, but must consolidate its share.

Apple retains the lion's share of the US and worldwide education markets, with 26 per cent US market share, and 14 per cent worldwide. An exultant Mitch Mandich, Apple's senior vice president worldwide sales, said: "We listen to

ILLUSTRATION BY KELLY BATH

our customers and work hard to design the best products to meet both classroom and administrative needs."

IDC pointed out that Apple's share has dropped since the fourth quarter of 1999, when the company seized 30.6 per cent of the US education sector.

Watch out for Expo

UBS Warburg analyst Charles Wolf singled-out Apple's unique competitive advantage (owning both OS and hardware platform), and Steve Jobs' management since 1997 for its "industry-leading innovation". He foresees "great things" from the company at the New York expo.

Merrill Lynch's Fortuna, warned that: "Unless Apple can deliver compelling vision going forward, we have concerns for its sustainability." Early this year, Steve Jobs, Apple's CEO, said that Macworld Expo, New York would be: "One you do not want to miss".

Traditionally, Macworld Expo NY has been an event where Apple has amazed its faithful – last year with the iBook, and in 1998 with the iMac. Rumours at the time of going to press include a revised range of iMacs, an Apple-branded wireless keyboard and mouse, and a stripped-down iBook Web pad. Visit **www.macworld.co.uk** for news from Macworld Expo between July 18 to 21. **MW**

Mac software reaches the high street

Retail giant WH Smith has begun installing SoftWide, a software shopping service developed by UK firm Tribeka, that will bring Apple software closer to the consumer. The company claims that available software will never be out of stock.

The difficulty of purchasing Mac software at retail has long been a source of criticism of the platform. The SoftWide service promises to bridge that gap, as the retailer begins to install it in each of the 592 WH Smith stores nationwide, following several months trial at selected locations.

SoftWide offers customers a wide choice of current software titles, with over 420 Mac titles available from 40 Mac software publishers, including Dorling Kindersley, EuroTalk, Casady & Greene, FWB and Totally Hip. SoftWide hopes to add further consumer titles soon after the launch.

Touch much

The first experience for the consumer is the computer – an iMac with a touch-sensitive screen. Via a clear, eye-catching customer interface, consumers take their pick of Mac – or Windows – software. A CD containing the requested software is burnt on the spot,

which takes between two and twelve minutes. The service also lets consumers create and print a label and CD inlay for their purchase. Inlays can be in full colour and up to 40 pages long.

WH Smith expects to add audio CDs, DVDs and Palm products to the titles on offer.

The service is currently available at selected WH Smiths stores in Birmingham, Chester, Croydon, Exeter, Gateshead, Nottingham and London, as well as the Oxford Street HMV store.

Publishers are protected by strong anti-piracy controls, using secure protocols to ensure products

are generated only by bona-fide staff members. Each purchase is logged and authorized at Tribeka's control centre, which issues publishers with sales statements. www.softwide.com **MW**
Jonny Evans

MacHack 2000: OS X meets the nerds

Up all night, the intrepid Mac hackers collaborate on their new code.

MacHack 2000, a conference for 400 professional and amateur Mac programmers, marked the first chance for most programmers to play with the forthcoming Mac OS X. *Macworld* writer Andy Ihnatko describes the difference between hackers and their evil cracker cousins: "A 'cracker' breaks into systems, destroys infrastructure, steals data, and basically exploits the Internet's insecurities in a desperate ploy to conceal his own emotional ones. A 'hacker' is a programmer who's devoted to a mastery of his subject."

Like all programmers, MacHacker attendees suffered mass sleep deprivation. The conference began promptly at 12:01am on June 22, and ran uninterrupted for 72 hours.

The event opened with a keynote speech by open-source advocate and Linux luminary Eric S Raymond. Mac OS X's Darwin core is open-source and Unix-based. Coders spent the rest of the day working on their hacks until the second keynote at 10pm by Adobe CEO John Warnock.

Adobe, OS X and HTML

Warnock assumed the role of elder statesman in the Mac community, spending much of his keynote discussing the history of computer graphics. He also told the gathered coders that some Adobe products will not be ready for Mac OS X when it ships, though he didn't specify which ones. However, he said he has a good personal relationship with Apple CEO Steve Jobs and has been able to change the Apple CEO's mind on a number of occasions. At home, he said he's a Macintosh user, but he said he sometimes has to use a Windows machine at work.

Asked why Adobe doesn't have a bigger presence in the 3D graphics market, Warnock said that current

Adobe boss John Warnock enjoyed a fireside chat with the Mac developers.

3D-modelling methods are too complex for the average user. Adobe recently made its first serious move into 3D by acquiring Carrara, which was originally developed by MetaCreations and combines features from Ray Dream Designer and Infini-D.

Warnock admitted that Adobe was caught flat-footed by the emergence of HTML. He said HTML evolved so quickly that Adobe was unable to respond with a more-robust imaging standard. But he noted that Adobe Acrobat is a popular format for posting documents on the Web.

Warnock had a hack of his own, a program called Distiller, written in PostScript, that turns PDF files into slide presentations. To the cheers of the crowd, Warnock said that he refuses to use Microsoft PowerPoint. Answering a heckler, he suggested that Adobe might be amenable to making Persuasion available in an open-source version. Adobe discontinued the presentation program in 1997.

Apple meets the hackers

Apple representatives fielded questions and complaints from developers during a feedback session. Responding to a hacker's comment that Mac OS X needs to look more like a traditional Mac interface, representatives said they were working to make the transition as comfortable as possible, but that some older parts of the system will have to be changed. While Apple is trying to keep some conventions, the message was clear: it is impossible to maintain the Platinum interface forever.

Apple also plans to add a Unix-style command line to Mac OS X, but does not want the average consumer to see anything but the Aqua interface. "If the user knows that Unix is below the Aqua interface, then we haven't done our job right," said Steve Glass, Apple's vice president of Mac OS 9 and software services.

Apple said future versions of Mac OS X Server will look and operate like the client version of Mac OS X, but with added server capabilities.

Godfrey DiGiorgi, Apple's development tools technology manager, said that Apple is working on a new set of AltiVec tools to aid developers in optimizing their products for the G4's Velocity Engine. Mac OS X, he said, will be far more optimized for AltiVec than Mac OS 9. **MW**
David Reed

No sleep till Shut Down

MacHack 2000 wrapped up with its infamous awards banquet, where the winning hacks created at the conference earned worthless tokens of honour from Duke's Hardware Store down the road. The top prize – a large rat trap – went to Alexandra Ellwood and Miro Jurisic for Dock Strip, an impressive reworking of the Mac OS 9 Control Strip that operates like the Dock in Mac OS X. Run the mouse over the Control Strip and the icons enlarged and shrank just as in the Dock.

Little A Traps for best youth hack, went to Justin Lee and Mark Johns for Doggy Style Windows, which played on a point made by keynoter Eric Raymond about dogs. Raymond said that a dog always knows the boundary of his property without the aid of deeds or fences. Doggy Style Windows forced all of the windows behind the current active window to scurry to a different location on the desktop. Making a new window active caused the other windows to scurry away again.

Other impressive hacks included:
- **Los Alamos Security**, which hides all of your mounted hard disks in a secret folder on command.
- **Ether Peg**, which teaches the value of turning on encryption when using AirPort. Created by a group of Apple engineers, it searched all the active AirPort networks at the show (virtually everyone was on AirPort) and displayed any .jpg images that were found. They didn't find any porn, but they did uncover a gigantic picture of a marijuana plant, in addition to numerous photos of cats.
- **Monitor Doubler**, which changed the resolution of a PowerBook monitor to that of an Apple Cinema Display. It included a magnification feature for small text.
- **Vertigo**, which lets you view a 3D version of your Mac desktop using 3D glasses.
- **A Palm hack** that duplicated AfterDark's flying toasters on the Palm LCD.

Networked: Proxim acquires Farallon

Proxim, a wireless broadband company with a 15-year history of creating products for the PC market, has acquired Farallon, a leading developer of plug-&-play Mac networking solutions.

Lynn Chroust, director of product marketing at Proxim, said: "We've been looking at the Mac market for some time. When we launched our Symphony product range we were inundated with requests from Mac people asking us to bring it to their platform. We chose Farallon because we hope to leverage its expertise in the Mac market."

Farallon will become a wholly owned business unit of Proxim. No redundancies are expected, and existing customers can continue to expect full support. Farallon will also gain access to Proxim's distribution network, and a way in to the crucial education market, through the company's existing relationships with educational value-added resellers. Chroust indicated that Proxim plans investment in Farallon.

The first product to come to the Mac will be the Symphony home-networking solution. Symphony for the Mac is expected to be competitively priced, without the usual mark-up Macintosh users have become used to when PC products arrive on their platform. Chroust told *Macworld* to expect some co-branded products in the next six months, with particular focus on wireless ADSL and ISDN set-ups for the emerging home broadband market.

Regarding Apple's existing networking products, Chroust said: "We can do networking better than Apple. Besides the fact our software is easier to use, Apple's focus is on wireless networking for dial-up connections. We offer solutions for other Internet connection types."

The Farallon division will continue to develop and support Farallon's cross-platform product lines, including its SkyLINE (wireless), HomeLINE (phone-line networking)

and NetLINE (wired ethernet) product families.

Other solutions available from Proxim include Stratum, its wireless ethernet-bridge product that can connect buildings up to seven miles apart, and RangeLAN, its enterprise/wireless service provider solution.

Since the acquisition, Proxim has made a major $13 million strategic volume-purchase agreement with Circle Net to install and service one of Proxim's product lines. A recent Philips Group report predicts the wireless local area network industry will reach $1.7 billion by 2004.
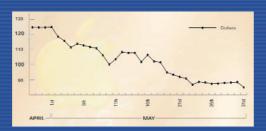
The primary application expected to drive the industry to yield those results is Voice over Internet Protocol (VoIP), according to the report, though Chroust agreed that Internet telephony faces resistance from some of the major European telecommunications providers. Proxim has partnered with Siemens to develop integrated wireless voice and data-network solutions for home and small-office users. Chroust told *Macworld* that, as a result, Siemens will release a handheld device built to offer VoIP access early next year. Interestingly, bearing in mind Steve Jobs' phone-phreaking past, Apple registered the iPhone.org domain name on December 15 last year.

The Philips report points out that the networking market gained a major boost when last year Apple put Lucent's wireless local area network infrastructure (as AirPort) in its iBooks, and later the rest of its range. **MW**
Jonny Evans

Business briefs

■ **Adobe's record profits**   Adobe returned record results for its second quarter, achieving profits of $65.8 million on $300 million revenues, a 46 per cent year-on-year growth, attributed to the success of its Web-publishing solutions. In other news, Murray Demo has been promoted to chief financial officer.

■ **Adaptec 'will be split in two'**   Adaptec is to spin its software business off as a separate company. The company anticipates an initial public offering of 15 per cent of its stock by the end of the year.

■ **3dfx/GigaPixel acquisition gets go-ahead**   The US Securities and Exchange Commission has approved the company's $186 million stock-swap acquisition of GigaPixel, a manufacturer of low-power 3D graphics technology, subject to shareholder approval.

■ **NEC and Mitsubishi**   The recently merged monitor-display divisions of NEC and Mitsubishi have begun operations in Europe. Expect aggressive price cuts across the range, as the companies aim to increase sales to 10 million units by 2004. Profit margins in the monitor market are expected to fall as competing manufacturers cling to market share.

■ **Yahoo launches business portal**   Yahoo has announced Corporate Yahoo, a business portal. The fee-based service offers companies a customized home page integrating corporate information with Yahoo content, such as news and stock quotes.

■ **ACI UK becomes 4D UK**   ACI UK, publisher of the 4th Dimension database-development environment, has renamed itself 4D UK. 4D also owns StarNine, publisher of the popular WebSTAR Mac Web-server suite.

■ **Palm to buy calendar firm**   Palm has announced plans to purchase Anyday.com, a maker of Web-based calendars. The deal will provide users with the capability to synchronize information, such as flight schedules, with handheld calendars.

Apple splits, halves and doubles

In our previous Business News, Apple's stock price was nearly $100 a share. Now, it's $51.25 per share – don't panic.

The new figure reflects Apple shareholder's decision to split the stock in two on June 21.

Shareholders saw stock values halve – but their numbers of stocks held doubled. Effectively, (at the time of going to press) Apple's stock value stands at $102.5, reflecting increased confidence in the company, following positive analyst comments in the past month (see page 28). Its lowest point in the last 12 months has been $21.03 ($42.06 at pre-split values); $75.188 ($150.366), its highest. High-tech stock values slumped recently, but are bouncing back – although investors remain cautious, concerned about interest-rate hikes and profit warnings from major players. The US consumer-spending index jumped 3.5 per cent in the quarter, its sharpest gain since 1994 – heralding a future inflation-beating interest rate hike.

Nineteen major analyst firms rate Apple shares as a buy. Apple has delivered positive earnings reports every quarter since 1998. Recent optimistic comments from highly placed analysts still point to another successful quarter from the company. Apple will announce its third-quarter results in July. **MW**

MAIN IMAGE COURTESY OF DIGITAL VISION

Product News

Look at tat!

Cadmium Systems has become the sole distributor of the royalty-free Image 100 library. The catalogue consists of 45 CDs with a further 40 titles also planned. Single images cost between £29 and £189. Discs cost £219. The images are available online.
Cadmium, www.cadmium.co.uk

Wireless mousing

Wacom has extended its Graphire product line with the Graphire Graphite – a graphite-coloured, translucent Graphire Mouse & Pen Set. USB-based, this is a mousepad-sized tablet with a pressure-sensitive pen and ball-free mouse with a scrolling wheel. Both mouse and pen are powered through the USB connection via the tablet, using Wacom's electromagnetic resonance technology (ERT). ERT uses a radio signal to locate the tools on the tablet surface, sending location, pressure and other information to the computer.

The tablet has a transparent overlay for tracing. The pen is pressure-sensitive, with 512 levels that simulate the feel of different media – such as chalk, pencil or paintbrush. The pen also has an eraser, and features a programmable double side-switch on its barrel, which can be set to various functions or keyboard shortcuts.

The mouse has three programmable buttons and a finger wheel for fast scrolling and Web browsing. It has a resolution of 1,000dpi for precise results, according to Wacom. The set comes with Corel Painter Classic and Wacom Pen Tools software for the Mac.

The Graphire Graphite Mouse & Pen set ships in late July, costing £73.
Computers Unlimited, 020 8200 8282

Hi-res camera launch

Fujifilm has launched the FinePix 40i digital camera. Due to ship in late August, it combines a high-resolution digital camera with digital-audio playback and a movie-clip capability. The camera has a 2.47-megapixel Super CCD (charge coupled-device), but it can deliver a maximum interpolated resolution of 4.3 megapixels (2,400-x-1,800pixels). It has a 1.8-inch, 110,000-pixel liquid crystal display (LCD) for picture previews, as well as an automatic flash and auto white-balance. It comes with a 36mm equivalent autofocus lens and is equipped with a USB port and cable to download files.

The camera can capture up to 80 seconds of sound and pictures. The clip can be reviewed on the bundled QuickTime software, with up to six minutes of video can be stored on a 64MB SmartMedia card. For MP3 playback, the camera comes with built-in encoding and offers maximum playback of 80 minutes on a 64MB SmartMedia card. Headphones are supplied. The FinePix 40i comes with two NiMH batteries and a charger.

Pricing is not yet set, but expect to pay between £500 and £600.
Fuji, 020 7465 5745

Fine and dandy
The FinePix 40i has a 2.47-pixel Super CCD and a 1.8-inch LCD. It can store up to 80 seconds of sound and pictures.

Megapixel camera ships

Toshiba has launched the PDR-M70, its first three-megapixel digital camera. The camera also features video- and audio-capture capabilities. The PDR-M70 has a 3.37-megapixel CCD, and can record up to five minutes video footage or 65 minutes of audio. 3x-optical and 2x-digital zoom are featured, and the external-flash sync function allows an extra flash module to be connected for added versatility. The camera has a brightness level indicator, a three-second boot-up time, and images are stored on a 16MB SmartMedia card. It costs £680.
Toshiba, 01932 828 828

New app, old interface

Macromedia is now shipping Dreamweaver UltraDev, its Web-application development software built around the Dreamweaver architecture. UltraDev replaces Macromedia's Drumbeat 2000, and is compatible with most industry leading languages. The software, which costs £399 – or £199 for registered Dreamweaver 3 customers – can be extended and customized to work within any development environment using Java technology, JavaScript, HTML, XML or C.
Macromedia, 0870 600 1041

Italian style

Italian firm Microdowell is preparing to release its cross-platform multimedia UPS (Uninterrupted Power Supply). This protects computers against sudden power interruptions, and also harnesses the power of its power inverter circuit as an amplifier, capable of 60W output. Optional high-performance speakers are also available. Distribution is not yet confirmed, but it will cost £165.
Microdowell, www.microdowell.com

Iiyama ships CRT

Iiyama has unveiled the Vision Master Pro 411. The 17-inch CRT monitor costs £209. It has a horizontal frequency of 30-86KHz and a 180MHz bandwidth, with a maximum resolution of 1,280-x -1,024 at 80Hz.
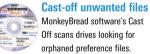Iiyama, 014380 314 417

Short-cut to speed

CE Software is shipping the £79 QuicKeys 5.0. QuicKeys offers flexible tools that will automate routine or repetitive tasks – from typing text, to launching applications, and controlling windows. Version 5 also supports Speech Triggers'.
CE Software, www.cesoft.com
Computers Unlimited, 020 8358 5858

Clean release

Aladdin is shipping Spring Cleaning 3.5, the latest version of its uninstaller for the Mac. The software includes iClean, which gets rid of Internet clutter and ensures privacy when using the Web. Spring Cleaning 3.5 has a search filter that narrows searches and produces more finely-tuned results. Spring Cleaning 3.5 is available from Aladdin for £35.
Computers Unlimited, 020 8358 5858

Cast-off unwanted files

MonkeyBread software's Cast Off scans drives looking for orphaned preference files. Unwanted preferences can then be Trashed from within the application, which costs $10 and can be ordered online from Kagi (www.kagi.com).
MonkeyBread,
www.monkeybreadsoftware.com

Boon for business

Hansa business solutions has released Hansa Financials 3.6, its modular financial-software solution. It's a client-server based solution that can be customized. Version 3.6 also adds a new calendar. Prices start at £700.
Hansa Financials, 020 7932 1040

Triple camera roll-out

Epson and Kodak have both added to their professional digital-camera range. Epson's latest offering is its highest-specified digital camera, the PhotoPC 3000Z, priced at £680. The camera boasts a 3x optical zoom and 3.3-million-pixel optical resolution. It includes Epson's HyPict image-enhancement technology, which increases the output resolution to 4.8 million pixels.

Controls include shutter and aperture priority options, full manual control of shutter and aperture, and manual focus. Also included are macro ISO-film equivalents, spot or divided brightness metering and manual-exposure compensation. White-balance adjustment, a range of flash modes, a hotshoe for an external flash, and a black-&-white photo mode come as standard. It also has an Automatic mode and a Program mode, and can capture 25 seconds of motion picture and sound.

The camera ships with a 16MB CompactFlash card, NiMH rechargeable batteries and other accessories, as well as a range of bundled software – including LivePicture PhotoVista, and Epson's Photo Print 2.

Kodak has introduced two cameras – the DC4800 Zoom and the DC5000 Zoom. Priced at £451, the DC5000 Zoom is a two-megapixel camera, with a weatherproof rubber-and-hard-shell body. It has a 2x optical zoom lens, which can be digitally extended to 6x, and features auto-focus, auto-exposure and a built-in automatic flash. The camera ships with an 8MB CompactFlash card.

The DC4800 Zoom features a 3.1-megapixel sensor, a 2x digital zoom and a wide-angle-to-telephoto 3x optical zoom lens. The Photo technique options include ISO 100, 200, and 400 ratings for variable light-sensitivity; creative film and filter options – such as sepia and black-&-white – three manual aperture settings, and automatic exposure.

The camera has a built-in flash with various functions. Priced at £596, it ships with a 16MB CompactFlash card and other accessories – including a long-life lithium-battery that can be recharged from within the camera.
Epson, 0800 220 546; Kodak, 0870 243 0270

Focus in
Epson's £680 3000Z (above) has a 3.3-million pixel CCD, and can be focused manually. It comes with a 16MB CompactFlash card. The DC5000 Zoom (above, right) is a two-megapixel camera. It costs £451 and comes with an 8MB CompactFlash card

Lexmark printer duo

Lexmark has launched the Z52 Color Jet printer and the Optra E312 . The Z52 Color Jetprinter is an ink-jet printer offering 2,400-x-1,200dpi in black and colour across all media types. USB connectivity is included, and the printer can print at 15 pages per minute (ppm) in mono and seven ppm in colour. It comes with a ColorFine print driver for "Web-smoothing" – which improves printing from the Internet, according to the company. The printer has built-in USB and parallel connectivity. The Z52 costs £118.

The £310 E312 Optra monochrome laser printer features 4MB memory, a 67MHz processor and a 10ppm print speed. Lexmark promise you'll get 6,000 pages per ink cartridge. PostScript, USB and Mac drivers are all supported.

Lexmark claims it's also beefing-up

Lex-marks the spot
The Z52 printer (left) can smooth Web graphics when printing. The E312 (above) is a monochrome laser printer.

Suitcase 9 gets carried away

Extensis has introduced Suitcase 9, the new version of its font-management software. Suitcase, which has a strong Macintosh following, has been re-written in version 9, and is also available for Windows for the first time.

The software features a unified dialogue box, which shows all fonts, sets and previews. There are four ways to preview fonts – alphabetically, QuickType, paragraph and waterfall. With the Live Font Previews feature, fonts don't have to be activated to be previewed.

Suitcase XT, for automatic font-activation in QuarkXPress documents, is a Mac-only feature. This examines documents opened in QuarkXPress – including EPS files – then opens the necessary fonts and closes them when the document is closed.

Suitcase 9 includes a copy of Suitcase Server and three server-connections for small work groups. Designed for creative professionals, Suitcase Server synchronizes authorized-font sets on a network.

Suitcase 9, with three server connections, costs £79. Upgrades cost £29 for a single user. Suitcase Server, with five connections costs £115.

Extensis has also announced Portfolio 5.0, its digital-asset management solution. It operates as a standalone or network environment, and also as the client for Portfolio Server. The program includes PortWeb, the Web-server plug-in that lets users create electronic portfolios for the Web. Portfolio Server 5.0 consists of five Portfolio 5.0 clients, PortWeb and Portfolio Server. Extensis has also released Portfolio Browser, a read-only version of Portfolio.

Portfolio 5.0 is customizable and searchable – users can create custom fields, organizing files by specifiable criteria.

Available now, Portfolio 5.0 single-user costs £129. Portfolio Server 5.0, with five clients, will cost £1,299.
Computers Unlimited, 020 835 85857; Computers 2000, 01256 868 102

Family affair
Extensis' Suitcase 9 and Portfolio 5 offer many new-media-management features.

DVD-production boon

Media 100 is offering two DVD-production systems, MediaPress Suite and MediaPress Suite SDI. The solutions include Sonic Solutions' DVD Fusion SL-authoring software and Media 100 MediaPress Suite MPEG-authoring solution.

The Media 100 MediaPress Suite enables real-time MPEG-1 and MPEG-2 encoding – with real-time preview during encode – and real-time MPEG-1, MPEG-2 and DVD playback. DVD Fusion SL can build menus, author interactive links, preview DVD titles and record the finished product to a DVD-R or DLT (Digital Linear Tape). The solution can also encode QuickTime files to MPEG-1 or -2.

MediaPress Suite costs £4,525; MediaPress Suite SDI costs £5,530.
Computers Unlimited, 020 8358 5857

Media fusion
The MediaPress suite allows real-time DVD, MPEG-1 and -2 playback.

Visioneer returns to Mac with sheet-feed scanner

Visioneer, the manufacturer of the PaperPort/Strobe colour-sheet-feed scanner, is returning to the Mac, with its Visioneer Strobe Pro scanner.

The compact 30-bit colour sheet-feed scanner comes with USB connectivity – although an optional SCSI interface is also available. The Strobe Pro comes with Mac OS, Windows 95/98 and Windows NT support in one box, and costs £154.

Measuring 2-x-2.5-inches and weighing 1.3lbs, the portable scanner offers a 300-x-600dpi optical resolution and a 2,400dpi enhanced resolution. It comes with PaperPort Deluxe for OCR (Optical Character Recognition).
Direktek, 01494 539 722

Apple updates

Apple's International English updates cannot be carried on our cover CD as Apple wants customers to download updates direct from its site. Visit www.macworld.co.uk/updates for links to the relevant Apple Software pages, and up-to-the minute Apple updates news.

Recent Apple updates include Video Extension 1.0 (improved use of video-cards), USB Printer Sharing 1.0 (share USB printers over a network), AppleWorks 6.0.4 updater (improved stability and RTF translation), the Multimedia Update (better audio CD and USB audio-input device support) and AppleScript update (bug fix and enhancements). Also, Apple has released FireWire 2.3.3 and ColorSync 3.0.1.

Third-party updates

■ **FreeHand 9.0.1**
This resolves issues with linked images and improves TIFF preview in EPS files.
■ **FAXstf 5.1.1/6**
Fixes Fax Browser memory-management in FAXstf.
■ **NAV 5.0/6.0 updates and Virex Virus Definitions 2000-06-01.**
The newest virus definitions from Mcafee and Symantec.
■ **SoundJam MP v2.1**
Improvements and bug fixes, including the option to create audio CDs straight from MP3s.
■ **ProJPEG 4.0.1**
Includes better error handling.
■ **Z-Write 1.1**
Bug fixes and dozens of new features and enhancements.
■ **MarkzTools III v7.99**
An update to the XTension for recovering corrupted XPress files.
■ **Eudora 4.32**
This fixes some text and long-address handling problems.
■ **CADtools 2.1.3**
Improves the applications compatibility with Illustrator 9, and fixes the Wall healer and Dimensions resize tools.
■ **Other updates on the CD include Papyrus 8.0.10, PM2Q XT 5.92, Flightcheck v3.84.**

Swann's FireWire duo

Swann has released two products – the FireWire card and the "Tilt and Swivel" iMac stand – and has announced its FireWire Hub. The FireWire card offers 400Mbps data speeds and requires a PCI-card slot. It offers plug-&-play FireWire technology, supporting up to 63 peripherals. The card has three six-pin ports, and comes with a six-to-four-pin FireWire cable. It needs Mac OS 8.5 or later, and costs £76.

The company also released its iMac stand, designed to fit all iMac models. The stand can swivel, tilt and turn to let users position their computer and screen to the most comfortable position. It comes in transparent grey and costs £29.

At Macworld Expo, New York, the company will show its FireWire Hub for the first time, *Macworld* can reveal. The hub supports up to six independent ports, each with a 400Mbps data-rate. The hub is aimed at users wanting to extend the reach of FireWire cables beyond the 4.5-metre limit of the specification – it can act as a repeater to extend the length to nine meters. It can also be used as a multi-port hub to connect to several FireWire devices simultaneously. The hub can be either self-powered via the mains, or bus-powered from the host computer. Swann's FireWire hub will ship in early August. The pricing was unavailable at press time.
Swann, 020 8358 5857

Swann-ing around
Swann's FireWire hub will be demoed at Macworld Expo, New York.

Epson makes century

Epson has broken the life expectancy barrier for printed images with a range of pigment-based inks, that the company claims have a light-fastness of 100 years. The inks, called Intellidge, are compatible with Epson's newest release, the Stylus Photo 2000P (see Reviews, page 45), and let users print photo-quality images that will last longer than traditional-photographic prints.

The company tested its new pigment-based technology under white-fluorescent indoor lighting at 70,000 lux – the equivalent of the brightness of 70,000 candles. The test image was displayed in a glass frame 2mm thick, with a 2mm air layer, at a temperature of 24 degrees centigrade.

The features of the Epson Stylus Photo 2000P – the only printer currently compatible with the ink technology – include 100-years light fastness, a no-margin printing feature, a wide (A3+) paper path, both parallel and USB interfaces as standard, and a one-year call-out service. The printer costs £680.
Epson, 0880 220 546

Centurion
The Photo 2000p can print images that last 100 years, claims Epson.

iMac gets speed kick

PowerLogix has announced the iForce series of G3 CPU upgrades for iMacs. The company claims the upgrades boost the performance of an 233MHz iMac by as much as 150 per cent. The upgrades are compatible with older, pre-slot-loading iMacs, and will ship in two models. The iForce 400Mhz upgrade has a 512K backside cache running at a 2:1 ratio. The 500Mhz upgrade has a 1MB backside cache, with a 5:2 ratio. The iForce is not built on a re-manufactured Apple board. It's not yet clear how PowerLogix accounts for Apple's embedded ROM, which is required for the Mac to work. Available from mid-July, the 400MHz upgrade costs £249. The 500MHz upgrade costs £379.
Channel Dynamics, 0870 607 0540

Are patent laws promoting self-interest,
or protecting the common good?

David Fanning

Patent nonsense

t's been compared to the moon landing in terms of human achievement. It's also proven a huge source of controversy, due to complex patent issues. The Human Genome Project has, after ten years, produced a rough draft of the human DNA sequence. This is like a road atlas of the human body – the only problem being that it has few signposts.

Now that we have the map, at least work will begin on deciphering its meaning – making new therapies and medical treatments possible. Or will we?

The flip side to this landmark project is the unseemly granting of patents to companies that have pieced together fragments of the human genome. It's controversial, because a DNA-sequence is a natural thing that occurs without the help of scientists or patent lawyers.

However, this hasn't prevented companies and universities patenting strings of DNA in the hope that they'll later cash-in on remedies for medical problems caused by discrepancies occurring in their patented portion. This means that, despite doing minimal work, a company can patent a part of the human genome, hope that it holds the cure for cancer or Alzheimer's – then sit back and wait for the real researchers to find the cure. When they do, the companies can enjoy a never-ending payday. It's the scientific equivalent of cyber-squatting.

Of course, companies aren't the only circling vultures – lawyers, as always, will cash-in on the legal complexities involved, because patent disputes are invariably settled in court – and usually only after long, drawn-out cases.

The patent process is designed to ensure that the hard work of researchers and inventors is not stolen by opportunists or hijacked by corporate pirates.

Another example of patent law gone crazy is the recent claim by British Telecom that it owns the patent on hyperlinks. A hyperlink is a link on a Web page that leads to another page, or another place, within the same document. At best, BT has a tenuous claim on the hyperlink patent: years ago, one of its researchers came up with the suggestion. It's like the Beatles suing every subsequent pop group, claiming they influenced them all. Or Clarkes announcing it owns the patent for shoes.

Anyway, enforcing its patent claim is unlikely to do BT any good – because by so doing, large ISPs will be forced to pay to use hyperlinks, or face being shut down. Way to go BT. This should endear it to Net users across the Western world. I can picture the scene: BT squaring up to AOL and Compuserve at the Old Bailey, in a trial with more legs than a millipede. Scarily, it would also be more boring that the never-ending Microsoft antitrust case.

Fortunately, BT has already announced that it won't sue individuals – which must come as a big disappointment to lawyers, who could otherwise have banked on an easy living for life.

But it's not only the fat-cat companies that suffer due to this patent waste of time and money. The government of India is currently deciding what to do about a US company that has successfully attained the patent for Basmati rice. Quite what the company intends to do with its patent, I'm not sure – but its unlikely to be good news for the poverty-stricken masses in rural India.

The domain-name merry-go-round is another area that has seen people looking to make easy money out of the hard work of others. However, registering IBM as a domain name isn't big or clever – and will just end up with the liberty-taker getting heavily sued. Taking credit for noticing the obvious may have been all right for Newton, although his laws of gravity and motion were never patented.

Apple was unsuccessful in suing Microsoft for stealing the look and feel of the Mac – and I'm glad it lost. If Apple was the only company able to use the desktop metaphor for computing, IT would be a duller business within which to work. Imagine the huge monopoly Apple would have gained if its patent suit had been successful. I don't think even hard-core Mac fans would welcome such a limited computer environment.

Monopolies stifle creativity, and this is something Apple should never have hankered after. On a similar theme, how much longer will Apple be able to stem the tide of iMac-like coloured-plastic PCs.

Since the iMac's launch it has been actioning patent suits against companies across the globe. Their crime? Having the audacity to use coloured plastics. Let's face it – translucent plastic is a nice idea, but it's hardly revolutionary.

So, to the genome patent holders, BT and Apple: be honest. Are you really protecting the fruits of your labour, or just beating other companies with the stick of restrictive practice.

Surely there's more kudos and goodwill to be gained from being respected as the inventor of hyperlinks, the desktop metaphor or the provider of a cure for cancer – rather than being despised as a company that seeks to stifle creativity and invention by greedily keeping things to itself. MW

Web radio is a dot.com-frontier
that's perfectly set for a gold rush.

Michael Prochak

Radio daze

The best job I ever had was working in a little radio station north of Cincinnati. Although the money was crap, the late-night slot matched my circadian body clock. And, in those days, 'underground' stations didn't have play-lists. This meant we could play anything we wanted: sometimes we'd broadcast extended sets with clever segues and cross-fades for half-hour stretches, with no advert or station break – and mess with the heads of like-minded people coming down or going up on their substance of choice.

Apart from pioneering gimmicks like playing music under the news, we also discovered a lot of the tricks now used by club DJs – like playing copies of the same record on two turntables, but spinning one slightly behind the other, creating a variable phase.

But while video may have killed the radio star, TV never managed to kill off radio itself – even if listening to most commercial stations these days makes you wish it had. Now that it's possible to deliver near-FM-stereo quality via the Internet, this 75 year-old industry may be on the verge of a massive comeback.

Although it's still one of the least-hyped dot-com options, Internet radio is one of the easiest to set up and, potentially, one of the biggest money-spinners.

At present, there are more than 3,500 audio broadcasters online worldwide, ranging from traditional radio stations transmitting existing programming over the Web, to start-ups looking to carve a new, unregulated niche in cyberspace. Strange as it may seem, many people actually listen to them. Already-established sites like Virgin Radio boast 205,000 listeners a month for its online broadcasts, and Yahoo!Broadcast transmits programmes from more than 500 radio stations. Even a tiny specialist country-&-western station in Texas is pulling-in over 60,000 listeners a month, which is more than most medium-sized over-the-air stations ever manage.

And, like nearly everything on the Internet, Web radio is unregulated. There's no need to queue for a government-regulated licence and neither do you have to broadcast from a leaky ship outside the three-mile limit. Now, anyone with a little technology and a lot of creativity can make a go of Web radio.

Web radio also means you can target a niche audience anywhere in the world. All that's needed is a programme that some audience somewhere wants to listen to. Traditional radio stations do have a big advantage with Web radio: they have to create neither the infrastructure nor the brand identity that causes most dot-com start-ups to stumble. Also, they have decades of experience in selling advertising.

But when all that rude-sounding ad-insertion technology arrives, even start-up Web stations will be able to identify and specify target-users according to demographics and sphere of interest. Let's face it, the prospect of advertising something that people will actually be interested in – and on a global scale – is a compelling reason for businesses to sink more ad money into Web radio. For example, music and videos are the most frequently purchased items on the Web. The interactivity provided by Web-casting makes it a perfect platform for generating CD sales, because listeners can buy music directly after hearing it.

A number of established bands, like Public Enemy, have already decided that the three 'Rs'– radio, record companies and retail – have had their day and so are venturing into Web radio. The good news for Apple is that Public Enemy are great QuickTime fans and their online radio station, bringthenoise.com – as well as most of their recording – is totally Mac-based.

Recently, Playlouder.com, the official Internet sponsor of Glastonbury, used QuickTime to bring the festival to desktops all over the world, by webcasting live for nearly ten hours a day (see page 21).

And this is just the latest follow-up on the recent announcement that RealNetworks has licensed Apple intellectual property for streaming video and audio over the Internet in QuickTime. RealServer8 now supports delivery of QuickTime content to QuickTime players, and augments the release of RealPlayer Plus8 – which includes a radio tuner that can access 2,500 Web-radio stations with MP3 support.

For now, most Web-radio listeners use their Macs or office PCs to tune-in while at work or at home. But even as we speak, an ambitious bunch of Californians are designing and building a dedicated Web radio that connects directly to your phone line and eliminates the need for a Mac or PC. You can bet that, with the various hand-held devices appearing on an almost weekly basis, it won't be long before you can listen to Web radio in your car.

If my little unsigned music side-project actually does take-off, you might eventually hear my lilting tones coming from a Mac or WAP-phone near you. And why not... I've got a great face for radio. MW

Adobe Acrobat InProduction 1.0

Publisher: Adobe (www.adobe.co.uk) 020 8606 4001
Pros: Comprehensive set of professional PDF tools; plug-ins work well together and offer an integrated approach to a PDF workflow; Acrobat 4.0.5 included; decent paper-based manual
Cons: Preflighter requires substantial PDF knowledge
Min specs: PowerPC 604 (G3/G4 recommended); Mac OS 8.5.1; 64MB available RAM; 95MB hard disk space
Price: £599 + VAT; upgrade from Acrobat 4, £455 + VAT
Min specs: PowerPC 604 – G3/G4 recommended; Mac OS 8.5.1; 64MB RAM; 95MB hard-disk space
Star Rating: ★★★★/8.7

Stay apart
Separator allows you to view individual plates and test colours with its dropper. Here the spot colour silver is being checked to make sure it hasn't been saved as a CMYK equivalent.

One of the great features of Adobe Acrobat is its plug-in nature. If a particular function appears to be missing, a third party software publisher can create such a plug-in and market it. In fact, a whole industry has grown up around this, with a number of companies providing nothing but plug-ins for Acrobat. Many of these are highly useful and include PDF preflighters, colour space converters and options for output.

Adobe Acrobat InProduction is essentially five plug-ins for Acrobat 4 that control key aspects of PDF print production. The upside of the plug-in nature is that the learning curve is substantially shallower than it would be with a brand new product.

Plug-in plusses

InProduction's plug-ins allow you to preflight PDFs and correct errors before sending a job to production; produce colour separations for output; convert a PDF's colour space to a different one; specify trim and bleed settings; and define trapping.

Crucial to a PDF workflow is the error-

Correction facility
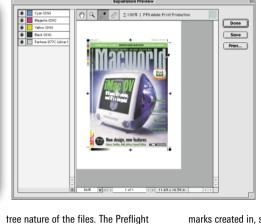*Run any PDF through InProduction's Preflight and you're guaranteed to find errors – but you'll need some serious knowledge to understand the problems.*

free nature of the files. The Preflight plug-in is used to set up the criteria for checking, reports back on errors and corrects them where possible. At the heart of this is a set of profiles, similar to those used to create a PDF within Distiller. InProduction comes with just three profiles: Press, Print and PDF/X-1. The latter is interesting as it is the basis of a new international PDF standard, developed by the Committee for Graphic Arts Technologies Standards (CGATS), and has been used to create all-digital, full-colour ads. It would be nice to have a standard Screen profile as well; suffice to say that profile creation requires some serious PDF knowledge.

The Preflight report is exhaustive to say the least, itemising all error aspects of fonts, images, colours and output (including text overprint). Once checked, there is the option for embedding fonts and fixing all errors, although some will remain as their correction is beyond the scope of InProduction.

There is little worse than printing from a PDF and finding a greyscale picture on paper where an RGB (rather than CMYK) one had previously resided. Color Converter handles all colour-based problems. It can change non-CMYK colours (RGB and LAB) to CMYK equivalents, tag images with the prerequisite ICC profiles, and handle colour correction for a specific output device. Even better, it can batch process a set of files. This certainly goes further than Quite Software's RGB Gone!

The requirements for a standard screen- or Web-based PDF pale into insignificance when compared with those for a print production workflow. For instance, digital imposition is almost impossible without bleed and trim marks which is where the Trim/Bleed plug-in comes in. Here the image area of a page is defined by the creation of media (page size), bleed, trim and art boxes. Trim

marks created in, say, XPress can be cropped and page size modified to handle the extra area needed for printer's marks.

There are certainly times when work needs to be carried out on individual colour separations. For instance, a PDF arrives with standard CMYK separations plus a spot colour yet printing is booked for CMYK only. InProduction's Separator can handle this with its spot-colour mapping. It can even map spot colours to specific plates. The tools on offer here also allow you to change a number of output options including halftone and transfer curves, positive or negative emulsion, the various parameters required for black overprinting, and add printer's marks. Previously, only Lantana Research Software's CrackerJack (reviewed last month) could output colour separations from PDF files.
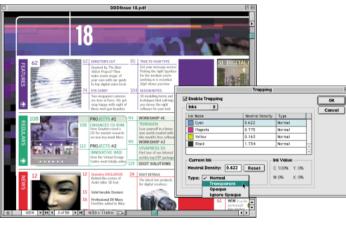
Separation game

Separator also goes a step further. In a similar manner to viewing channels in Adobe Photoshop, here individual separations can be examined on-screen - very useful for checking colour components of images and colour text knockouts. You can even view the effect of two or more separations on top of each other, although it would be useful to view them side by side as well.

The final plug-in may well be the most important of the lot from the point of view of a repro house or printer. Standard offset litho printing always has a level of inaccuracy, or misregistration, resulting in white gaps where colour areas don't fit closely together. To get around this, a level of 'trapping' is used where some areas are expanded and set to overprint to fill such a gap. Such trapping is usually set colour by colour within the DTP program but it seems to be a little-known fact that with QuarkXPress 3.32 or later, such information is only kept when pre-

separated PostScript files are created. Create a composite PDF and all trapping data is trashed. The Adobe in-RIP Trapping plug-in is priceless. By using simple algorithms to decide how to set up colour traps, the plug-in can create fully trapped colour separations using either an attached PostScript 3 output device or a specific PPD (PostScript printer description) file in preparation for outputting later. Alternatively, InProduction's Press profile can be used.

Macworld buying advice

There is little doubt that much thought has gone into the make-up of this set of PDF tools. Aside from being five useful individual plug-ins, they work well in collaboration with each other. A PDF arrives from a client and is run through Preflight with errors corrected where possible. Then Color Converter deals with any colour space problems, perhaps mapping spot colours to their process equivalents, followed by Trim/Bleed to add sufficient area around a page for printer's marks to be added later. Adobe in-RIP Trapping then creates a fully-trapped file ready for output, Separator adds printer's marks - and allows you to see the final file separation by separation.

Well trapped
For accurate colour-traps, InProduction can create and set trapping parameters for processing later in an Adobe PostScript 3 RIP

Sounds too good to be true? Not really. Given a decent level of repro and PDF knowledge, InProduction offers incredible scope for working with a PDF workflow. If there is a down side, it's the fact that without such a level of knowledge, InProduction is also capable of totally wrecking your files! It really is intended for the professional market, not the likes of an average production editor

in a publishing house. There are a number of existing products that handle aspects of InProduction, including CrackerJack for the output side, callas' pdfToolbox for preflighting and RGB Gone! for basic colour conversion. But for a fully integrated approach to PDF workflow, InProduction has no competition at the price.
Vic Lennard

Stylus Photo 2000P

Manufacturer: Epson (01442 261 144)
Pros: 100-year lifetime for prints; superb looking images, almost silent and fast.
Cons: Mac OS 8.1 and USB.
Price: £599 + VAT; upgrade from Acrobat 4, £455 + VAT
Min specs: Mac OS 8.1 and USB.
Star Rating: ★★★★★/9.3

A couple of months ago Epson released the Stylus Photo 1270. At the time it was the best ink-jet printer I had ever seen; it's fast, quiet with great colour quality. Well Epson have made it even better – and called it the Stylus Photo 2000P.

Printer images, no matter how beautiful, will fade over time – even photographs fade. An average inkjet print will not last long when exposed to normal light – anything from one to three years. The 1270 made a significant advance on this by making pages last 10 years. However, even ten years is too short a time for people like photographers. There isn't much point in printing wedding photographs that won't last.

The Stylus Photo 2000P has upped the stakes and now produces prints that not only look spectacular but will last for 100 years, enough for any marriage. This is going to change the way many photographers and artists work. Now you have the capability of outputting images that are indistinguishable from photographs, as large as A3 in size and can be displayed without fear of fading. Perhaps this will even start a market in digitally printed art.

Pigment power

The thing that makes this printer so good at long-lasting pictures is a combination of special ColorFast-Pigment-based ink and Epson Archival Matte Paper. Normal ink jet printers use a water based dye to colour the paper that is being printed on. Pigment is actually a colour that sits on top of the paper, in the same way that paint does. What Epson use is a mixture of both pigment and dye based ink, so it has the quality of a dye based ink with the longevity of pigment.

The rest of the printer is much the same as the Stylus Photo 1270, though I am reliably informed that simply swapping the ink will not make your 1270 into a 2000P. The 2000P uses the same quiet engine to power the ink heads,

making it the quietest printer I have ever come across. It also has a new spiffy paint job – a silver case to denote its premium quality.

If you need to print from applications that use PostScript there is a software RIP available. This will ensure QuarkXPress and vector-graphics programs like Illustrator and Freehand are able to take advantage of the printer. To connect to the 2000P you will need USB, though there is a PC parallel port for Windows users.

If I have a gripe it's about the ink cartridges. Unlike other printers, Epson has opted for single-colour cartridges rather than individual cartridges. This means that a soon as one of the colours has run out you need to replace the whole cartridge.

Macworld's buying advice

At £680, the wonders of the Stylus Photo 2000P don't come cheap. The advantages warrant the extra cash, though, because it now becomes a professional tool. For the right person – a photographer or artist – this printer could be a goldmine and therefore worth every penny. There are other options for printing long lasting images, but not at this price.
David Fanning
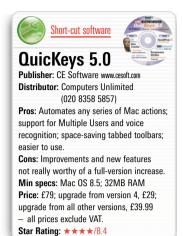
Short-cut software

QuicKeys 5.0

Publisher: CE Software www.cesoft.com
Distributor: Computers Unlimited
(020 8358 5857)
Pros: Automates any series of Mac actions; support for Multiple Users and voice recognition; space-saving tabbed toolbars; easier to use.
Cons: Improvements and new features not really worthy of a full-version increase.
Min specs: Mac OS 8.5; 32MB RAM
Price: £79; upgrade from version 4, £29; upgrade from all other versions, £39.99 – all prices exclude VAT.
Star Rating: ★★★★/8.4

At *Macworld,* QuicKeys is used extensively in the creation of the cover CD – from the simple colour-coding of folders to show whether permissions have been obtained, through to the reorganization of window contents and key-controlled emptying of the Trash.

First appearing in 1987, QuicKeys has become the industry-standard automation program and has seen many improvements – with the last increment, version 4.0, being a substantial update. Version 5.0 is Mac OS 9-compatible and supports Multiple Users. That said, its predecessor was also compatible with

OS 9, and few will require the added functionality of Multiple Users, so what else does QuicKeys (QK) 5.0 offer?

As the functionality grew in QK, toolbars became unwieldy once they held a number of shortcuts. QK 5.0 now offers multiple tabs, each with its own set of shortcuts. Even better, each tab can be set-up, or "scoped", to function with specific programs, and contextual menus are used to make life even easier.

Another major addition is speech recognition. Those of you who read my feature in May 2000 *Macworld* will appreciate that most Power Macs can be used with Apple's PlainTalk technology to control many day-to-day aspects via spoken commands. QuicKeys 5.0 makes use of this, meaning short-cuts can be voice-triggered.

Version 4.0 made it easier to create shortcuts through its Setup Assistants, but offered only a subset of all those available. QK 5.0 takes this a step further by adding seven more – including File Recall, Web Launcher and Project Saver. QK 5.0 has also tackled another awkward aspect – that of creating and editing toolbars. The new procedure is certainly easier, courtesy of the Toolbar Settings dialogue box.

QuicKeys has never been short on innovative ideas, or on offering functional solutions – usually catered

for by third-party add-ons. A good example of the innovative side is the new "pop out" toolbar that hides beyond the edge of your screen, and appears as you pass over the portion in view. Lock Screen is of the functional kind, being both a screensaver and a computer lock-out.

Other features include long-shortcut names (up to 255 characters rather than QK 4.0's 15-character version), improved Type Text (up to 2,000 characters) and better timed-triggers.

Macworld's buying advice
A year ago, QuicKeys 4.0 was unreservedly recommended for first purchase or upgrade – the improvements were that substantial. But QK 5.0 doesn't have quite enough new features. If you're an existing QK 4.0 owner and support for Multiple Users and voice recognition are of little interest, you may not want to pay another upgrade fee. CE Software needs to be careful not to kill the fatted calf.

QK 5.0 is the best of its kind. Find out for yourself by installing the 30-day trial on this month's cover CD.
Vic Lennard

Short-cut stalwart
QuicKeys 5.0 has some nice new features, including tabbed sets of application-specific shortcuts with contextual menus, plus voice-recognition triggers and support for Mac OS 9's Multiple Users.

Internet file-sharing

FTP Client Pro 3.0

Publisher: Vicomsoft (01202 293 233)
www.vicomsoft.com
Pros: Drag-&-drop interface; suffix mapping; automatic translation; folder synchronization.
Cons: None.
Min specs: Internet connection.
Price: £19 excluding VAT (online only)
Star Rating: ★★★★★/9.1

Almost nobody simply transfers files between computers in the same building anymore – today's users move files over the Internet, between computers that may not even be located in the same country.

File Transfer Protocol is a platform-independent method for copying files around the world, but its quirky behaviour makes it tedious for routine chores such as uploading Web-site content or updating files. The latest release of Vicomsoft's FTP Client Pro adds features, such as file synchronization, to make these chores painless.

FTP Client Pro 3.02 offers a Finder-

like view of files on remote systems, with drag-&-drop support for both downloading and uploading. You can customize the view to display the particular attributes that interest you – file name, type, size, date changed, and so on – and set up remote and local file-system views side by side, for easy comparison. The utility uses suffix mapping and its Smart Translation feature – which examines the contents of files during download – to automate file-transfer conversions. It supports Windows, mainframe, AS/400, and many other proprietary-server types. If a transfer gets interrupted midstream, the program can pick up where it left off.

New in this release is a sophisticated-synchronization feature that can copy changed files from a local directory to a remote one, and vice versa. The synchronization process avoids expanding compressed files, and it copies modification dates from the most current system – rather than setting them to the current date. Other file-synchronization utilities lack this feature. It also takes into account time differences with the remote location, and can operate in a two-pass mode to propagate changes in one directory to the other.

A Persistent Download option means it keeps trying to download a file from a busy server while you do other work. The 3.02 release also supports a number of new server types and offers improved compatibility with existing servers. Other enhancements include a streamlined interface, audio alerts for completed and failed downloads, support for MacBinary III, direct URL parsing, and the ability to make FTP Client Pro your browser's preferred FTP download tool.

Macworld's buying advice
FTP Client Pro 3.02's slick interface and handy features make it a must-have utility for anyone moving files over the Internet.
Mel Beckman

Syncing up
Vicomsoft's FTP Client Pro 3.02 gives you a lot of control over synchronizing files using a remote system.

Video-editing software

EditDV 2.0

Publisher: Digital Origin www.digitalorigin.co.uk
Distributor: Computers Unlimited
(020 8358 5858)
Pros: Clean editing-environment; fast, solid feel; great titling-ability; good value for money.
Cons: Audio support is weak; single level of undo; its competitor, iMovie, is free.
Min specs: Mac OS 7.6.1; 96MB memory; FireWire port; FireWire/iLink DV camera; large hard drive.
Price: £450 excluding VAT
Star Rating: ★★★★/8.8

EditDV, from Digital Origin, is one of a range of video-editing packages available for the Mac. It was one of the first packages, and has become a comprehensive package for producing medium-to-long videos.

EditDV is bundled with several software titles, making it good value for money – as well as providing a suite of useful tools. It comes with Media Cleaner EZ, Photoshop 5.0 LE, SpiceRack Pro Lite and Peak LE 2.1. These are all reasonable cutdown versions of full-retail software, and it's convenient to get everything bundled in one box.

On the side

It also ships with RotoDV, PaintDV and MotoDV, which complement the editing functionality of the core software. RotoDV is the most useful of them, and allows for rotoscoping or painting on sequential video frames. This technique is most frequently used for wire removal or adding special effects to video footage.

The software comes with a detailed printed manual and an Acrobat version on the CD. Also in the package is a quick reference guide and a set of stickers for your keyboard. Sadly, the stickers are not very clear on the black keys of the new USB and PowerBook keyboards. There's also a six-pin to four-pin FireWire cable in the box.

Digital Origin recommends an additional drive for storing the DV files – at 210MB per minute, digital video can quickly fill most hard drives. 45 minutes of footage equates to about 10GB. Video editing puts the Mac under a heavy load, as it has to move the video from the disk drive, decode it and display it, or transfer it to the FireWire interface without dropping any frames of the footage.

Installation is relatively straight forward. Unfortunately, Digital Origin's FireWire extensions conflict with Apple's QuickTime FireWire DV Enabler – the installer prompts users to disable the extension. This will stop Premiere and Final Cut Pro from capturing DV files, but EditDV's read-me states a solution is being developed.

There's a good tutorial on the CD that covers how to use the editing environment, some special effects, and the titling functions.

The software supports only digital video, this means that the project settings are based around TV standards. This is either PAL or NTSC , with 16:9-wide-screen support. There are several different levels of audio capture supported – 32KHz, 44.1KHz (CD quality) and 48KHz.

Most consumer cameras use 32KHz audio, but the flexibility to base a project around CD- or DVD-quality audio is good. To back this up, audio can be exported at these sample rates either locked or unlocked. EditDV can also work with progressive-scan footage, common on more expensive cameras.

Bin it

Once a project is set-up, the footage is either imported from a disk, or captured direct from the camera. It can then be organized into bins – a sort of virtual folder structure. Batch capture and logging are supported, so you can select the footage you want to capture by previewing it, then leave the capture to copy only the data needed to your drive. This can now be done directly from within EditDV.

EditDV has a clean interface, but it really requires a 1,024-x-768-pixel screen to be comfortable – a PowerBook screen is fine. For a longer editing session, a dual-monitor set-up would be a bonus. There are six windows to work with: source and monitor, sequencer (timeline), project window, sound level, special effects, and a controls window for the camera or DV tape deck.

It's possible to output the footage directly to a TV connected to the camera. Previewing edits is much quicker like this, as the camera decodes the DV footage.

The editor is fast and efficient. When paused, it quickly resolves to the full-quality image. This makes previewing footage for editing easy. Almost all the major functions are mapped to single-key shortcuts. Once learned, this speeds editing no-end.

Digital Origin's own DV codec makes displaying video very flexible. There are many detailed options for the codec, covering black and white points – which is useful if you're combining computer-generated images and DV footage. The compression quality of the SoftDV codec

is higher than that of the DV codec in QuickTime 4.1, as it causes less glitches on compression.

The editor supports several different types of editing: including three-point, ripple, roll, slip and slide. It can also add footage into a specified length of a programme, this four-point edit allows one clip to be swapped for another without affecting the carefully structured sequence of edits in the rest of the programme. The program is intuitive to use and is responsive – whether you're putting together a rough-cut of the video, or doing some fine trimming of a clip.

There are quite a few special effects in the bundle. EditDV 2.0 supports the QuickTime effects architecture, which provides a selection of rendered effects and some standard SMPTE (a digital-time code) wipes and dissolves. There are also some 2D and 3D effects options for Picture in Picture tricks or spinning-video frames, using the Pan Zoom and Rotate suite. The titler is fully featured, providing a great range of typographic effects, from simple justification and gradient fills, to scrolling-text effects – all of which are key-frameable. Finally, there is a set of colour-replace, chroma and luma keying tools – which allow colour correction and blue-screen work within EditDV.

Macworld's buying advice

This is a solid editor for working with DV footage. If you have outgrown iMovie and are looking for a more complete package, then EditDV deserves your attention. Digital Origin recently announced that it will be adding Adobe After Effects 4.1 to the bundled software for EditDV 2.0. This will redress the weakness in compositing, and makes a good-value bundle even better. Adobe Premiere is about the same price, and Apple's Final Cut Pro handles effects and editing – but costs more. However, EditDV does exacty what it sets out to do – it's a great editor.
Gavin Bell

New edit-ion
EditDV shows all the information needed about a clip – including size, duration, the number of tracks, and the number of frames selected.

Database-development package

FileMaker 5 Developer

Publisher: FileMaker   (0845 603 9100)   www.filemaker.com
Pros: Distributes royalty-free runtime solutions; improved security; includes FileMaker Pro 5.
Cons: Boring clip art; runtime has limited deployment.
Minimum specs: 16MB RAM; Mac OS 8.1.
Price: £399 (excluding VAT)
Star Rating: ★★★★/8.5

FileMaker Developer 5 (FD5) is the latest offering from the database specialists. This version introduces a single tool to replace a number of separate applications in previous versions, and introduces some new functions. New drivers are provided to integrate with other database formats and emerging-Web technologies.

The documentation supplied with the Developer edition is well structured and supplied on both paper and PDF format. Due to the simplicity of FileMaker's interface, it won't take long to learn to build complex databases and deploy them across a variety of networks.

Combined and updated
The main component in Developer 5 is the Filemaker Development Tool. This is an update of separate resources from Pro 4 Developer Edition (DE4), with some new features. This tool allows the developer to specify how databases are deployed and then presented to the end-user.

The old binder application, which scooped-up all the databases within a solution and presented them as a single file, is now integrated into the development tool. This also provides runtime functionality – meaning the database user doesn't need a local copy of FileMaker Pro 5 (FP5) to run a database created with FD5.

Runtime provides a built-in, platform-independent application to display the data, using layouts and scripts created in FileMaker. The runtime programs run on Windows – including Windows 2000 – and Macs without any reconfiguration, and incur no royalty fees for deployment on third-party sites. However, runtime

Defining databases
FileMaker has combined several tools into one in 5 Developer. The binder application of version 4 has been incorporated, as have some new features – such as automatic file naming.

Dynamic data
The ability to give a database an XML front-end means data can be managed dynamically.

solutions have some portability issues with ODBC and JDBC, and they're incompatible with the FileMaker Web companion.

The old Kiosk application that removes the menu bar from bound solutions is also integrated into the tool. Kiosk mode means buttons, links and scripts are the only way to navigate and use the database. This makes particular sense in running applications where the user is not required to know how to use a computer – on a touch screen for instance.

Developers can rename files within a solution, and automatically update links to the internal scripts within it. For example, if a Mac-only network solution is to be redeployed to a Web server for access via an intranet, or over a multi-platform network, all the file names within the database should end in .fp5. In this case, the FileMaker Development Tool automates the appending of the tag and then changes all internal scripts and links within the solution.

Locked out
With databases deployed on a client's network, and possibly unsupervised by the developer, the FileMaker Developer Tool can permanently lock the structure of the database to prevent modification. This is more secure than using access privileges to prohibit modification, although it would be wise for the developer to keep an original unlocked solution.

The ability to change some of the menu names – about, help or scripts – previously existed in a separate application, but it's now included as a function of the Tool. This allows developers to add personalized credits, shareware registration, or help systems

in runtime solutions. Because this feature doesn't work in Kiosk mode – where the menu bar is removed – it could be helpful if it was extended to the splash screen.

To fill up the CD, there is also an Artwork Sampler file and some interface elements. The artwork sampler is a FileMaker image library with over 2,000 Web-ready graphics. The interface elements contain 11 databases for personalizing dialogue boxes and layouts. These help create multi-state buttons, calendars, and conditional-value lists to enhance databases.

What you need
The only other useful elements on the CD are the modules that access FileMaker databases from other technologies. These improve connectivity to emerging Internet technologies and other database formats.
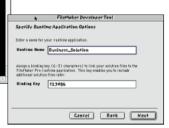
Version 5 supports more open standards, to bring it into line with other boxed Macintosh database products, such as 4D. These formats are used and developed on Macintosh and other systems, and include XML, JDBC, ODBC and other Application Programming Interfaces (APIs).

Improvements to the FileMaker Web Companion allow XML -capable browsers to access FD5 data. The Developer Edition includes a database of XML (Extensible Mark-up Language) definitions to plant into Web pages.

FileMaker Pro manipulates XML in the browser instead of having to reload from the server at each request. To format the XML documents, you can use Cascading Style Sheets (CSS), Extensible Style Sheet Language (XSL) or a scripting solution using JavaScript or VBScript. There's also a simple example to get novices started. The JDBC (Java Database Connectivity) driver included with

Developing environment
The FileMaker Developer Tool combines separate tools from version 4 and adds new tools, making it more versatile.

Developer 5 supports a subset of the SQL-92 Entry Level standard, so it isn't a true "JDBC Compliant" driver. However, the driver works with development tools to build Java front-ends to FileMaker Pro 5 databases. The JDBC Driver allows developers to add, delete, and search for records, and execute scripts.

The ODBC (Open Database Connectivity) driver allows developers to build front ends with popular RAD (Rapid Application Development) tools that access FP5 data. Using SQL (Structured Query Language) statements, developers can export data into other applications, such as word processors, data analysis and spreadsheets.

Nice and easy
To deploy the FileMaker ODBC driver to access FD5 data over a network, there is a simple ODBC installer. The Developer edition continues to support CDML tags, CGI and other programming languages, such as C++, using an extensive plug-in architecture.

Developer 5 stumbles in its marketing, rather than its features. It includes one copy of FileMaker Pro 5 that some people may already own. It should be possible to buy the development tools without the program. To deploy a solution for use by more

than ten people on the Web, you need to buy the Unlimited edition – which includes another copy of FileMaker Pro 5.

The clip art provided is stale, and most of the artwork comes straight from the Claris Home Page school of Web images – so few points for new or usable material here.

Macworld's buying advice
This application will suit any FileMaker developer whether the data is to be made available via the Internet, a mixed network or a stand-alone Windows or Macintosh computer. The features are strong and the program is robust.

These tools will be of use only to Filemaker users, since they do not work on other databases. They provide features that are unavailable elsewhere, and are easy and quick to use. Existing FP4 and 5 users will find these tools especially useful.

Because FileMaker is so easy to learn, this kit would suit experienced developers running FileMaker sites through third-party front ends, intermediates deploying large and complex sites over networks or the Internet, and beginners writing their first database.
Frank Hutchinson

Safe and sound
FileMaker 5 Developer can permanently lock the structure of a database, so data can still be entered, but hierarchies and fields can't be changed.

On the edge
*InDesign 1.5's redesigned
interface can centre text vertically
and place it along the outside
edge of the frame.*

When Adobe first shipped InDesign 1.0, the page-layout program felt premature – as if the company needed to get something out the door, but had only a square table with three legs. Sure, it was usable, but at what cost in the time and energy of users? Fortunately, Adobe mobilized its forces, stayed focused, and took advantage of InDesign's modular structure to release version 1.5 only six months later – solving many of the first version's most glaring errors and omissions. InDesign 1.5 is a table with four legs now, though it still wobbles something fierce every now and again.

Adobe paid attention to users and reviewers when it came to fixing some of the most glaring deficiencies of InDesign 1.0 (see Reviews, October 1999). Version 1.5 improves on the crippled path-editing tools – you can now select and modify more than one point at a time on a path – or even points on different paths. And, InDesign 1.5 boasts text-on-a-path features that not only match QuarkXPress's, but far exceed those in Adobe Illustrator.

Adobe has also slightly improved InDesign's frustrating text-runaround features. Instead of relying solely on physical frames for controlling text wrap, InDesign 1.5 can recognize embedded paths and alpha channels in bitmapped images. Unfortunately, InDesign is still

brain-dead when it comes to EPS files created in Illustrator or FreeHand – the only way to run text around the shapes of such graphics is to either create a frame based on an image preview, or drag the images into InDesign. The latter solution is less than ideal, as it transforms your single image into a collection of objects.

InDesign 1.5 can also use the alpha channel or path information to create a clipping path for a placed graphic. However, unlike QuarkXPress, InDesign makes you convert clipping paths into frames (boxes), so it's still infuriatingly easy to move an image while leaving its clipping path behind. Adobe needs to rethink its entire concept for working with frames and clipping paths in InDesign.

Other new features include an eyedropper for sampling and applying colours, vertical justification for text frames, and new control characters that indent text or send it to new positions. Adobe has also resolved one of version 1.0's most glaring deficiencies: whereas InDesign formerly required a separate – and expensive – program to trap files, the new version's impressive native trapping feature can trap to its own objects, as well as placed raster graphics – though not to placed EPS images.

Despite all these new features, InDesign needs many more before we'll consider it a killer app. It still lacks long-document features. such as table-of-contents generation, indexing, and style and page-number synchronization between documents. You can't yet combine spot and process colours, as you can in QuarkXPress. PageMaker users who switch to InDesign won't find a Story Editor feature. And, unbelievably, InDesign still has two keyboard shortcuts for accessing the Grabber Hand – the option key when you're inside a text block, and the spacebar when you're not.

You should ignore Adobe's minimum hardware requirements – most users report that they need a G3 or a G4 with

at least 128MB of RAM to use InDesign with any degree of efficiency. In addition, because the program opens so many files as part of its plug-in architecture, some users have had to upgrade to Mac OS 9 to avoid error messages warning them that they have too many files open. Also, watch how your Mac OS RAM usage expands while InDesign is running – an increase from 40MB to 70MB is not uncommon.
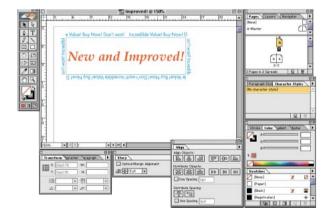
Even when your system meets these requirements, InDesign can run surprisingly slowly. Just a few graphics on the page can slow down screen redraw; you may find that even a text-only chapter gets terribly bogged down. And, InDesign can take forever to spool a short document to a laser printer.

One of the most interesting aspects of InDesign 1.5 isn't a feature or a performance enhancement, but its upgrade policy. When Adobe first announced an upgrade price of £59, existing users had a quick and loud reaction. Adobe backed down and offered the upgrade free to anyone who had paid the full price for InDesign 1.0; for everyone else, it changed the upgrade price to a much fairer £20. Within a week of Adobe posting the new upgrade policy, the revolt was over. InDesign 1.5 is not backward-compatible, so if one person in a workgroup decides to upgrade, everyone else should follow suit.

Macworld's buying advice
It's astonishing that Adobe managed to release such a significant upgrade in such a short time. Added to InDesign's already superb typography, master-page innovations, native export to PDF, multiple levels of undo, and familiar Adobe interface, the new features make version 1.5 completely suitable for short or single-page documents. We didn't feel comfortable recommending InDesign 1.0 to desktop-publishing pros, but with this new-version, InDesign finally begins to merit comparison with QuarkXPress.
David Blatner and Sandee Cohen

Although portability is a bonus, having to carry a PowerBook or iBook can be a drag. Atlantic's Classic Foldover Bag wasn't designed for carrying portables, but it actually does the job pretty well.

Too much space
Usually, a laptop bag distinguishes itself with the number of pockets covering its surface. If you've ever used a bag like this, you'll know the frustration of looking in 11 pockets to find your modem cable. More pockets mean more places

to lose things – and more clutter to fill them up. The Atlantic bag has one outside pocket, and three easily-accessible compartments inside. There are the usual pen and mobile-phone holders, but nothing over the top.

The centre compartment will keep an iBook or PowerBook safe from harm, and there's plenty of room for cables, and extra batteries in the other pockets. That still leaves room for documents and other stuff in the remaining space. The back of the bag has a handy sleeve to go over

the handle of wheelable luggage. This makes it a little more secure, both from theft and damage.

Macworld's buying advice
If you don't want to take the Swiss Army knife approach to laptop bags, the Atlantic bag is a more sedate choice. Its discreet looks may also throw off potential thieves. But I'd choose it over a traditional-laptop bag because there are less nooks and crannies to lose things in.
David Fanning

TombRaider IV: The Last Revelation

Publisher: Eidos Interactive
www.eidos.co.uk
Distributor: Softline
(01372 726 333)
Pros: More useful moves; smarter weapons, with laser-sight targeting.
Cons: Von Croy gets on your nerves – and Lara's.
Minimum specs: 233MHz or faster; 32MBs RAM; Mac OS 8.1; 4xCD-ROM; 3D acceleration.
Price: £39 including VAT
Star Rating: ★★★★/8.5

O
K, so I haven't managed to finish TombRaiders I, II or III yet, but I blame this on annoying time-wasting – such as work. Anyway, I *will* complete this latest – and possibly the last – Tomb Raider adventure from Eidos an Core Design.

The Last Revelation takes Lara back to Egypt and the tombs of the Pharohs. Many of the puzzles are based on the myths and legends of ancient-Egyptian civilization.

The scenery is excellently crafted, and the camera angles are more film-style than merely side or front view. The cameras swishing around Lara give a spooky sense of theatre. The overall gaming experience is intense, fast and never has a dull moment – except when you're forced to listen to the boring Von Croy during the training level.

Remember to hunt everywhere for secrets before heading onwards in a rush. Some secrets are vital later on in the game. However, the more secrets you find, the more difficult the game gets. Many of the items Lara discovers can be combined and then used to start-up vehicles or to unlock doors and solve puzzles.

The game begins with a flashback to Lara as a young girl – with pigtails – accompanying thr famous professor Von Croy on a trip to Cambodia in 1984. As the two explore a temple, Lara receives her adventurers training. Even if you're not a first-time player, this training level

Lara wants her mummy
In the Last Revelation, Lara can perform more moves, has new weapons, and – if she's not careful – will be responsible for the destruction of the world.

introduces some new moves which will be needed later in the game, such as rope swinging. However, it doesn't cover all the new moves, such as pole climbing and jumping to pull switches in mid-air. There's no practice for any of the vehicles, such as the Nitro-powered motor bike used later in the game.

Lara can now shimmy around corners while hanging from a ledge now – this will ease players' frustration no end. She can also drag and push objects other than blocks, such as large ornamental vases, not just square objects of previous versions. And, she can now shoot at objects to acquire power-ups or solve puzzles.

Levers are more complicated in the Last Revelation – they come in all shapes and sizes, requiring a little more thought

and handling skill to manipulate. Core Design has also added new weapons and an easier-to-use inventory.

As per usual with the TombRaider games, you can find multitudes of extra information on gamer's Web sites – such as complete game and level-by-level walkthroughs, cheats, tricks, level skips, unlimited ammo and weapons, and biographies from the previous game versions. If you discover any cheats of your own let us know on the Macworld Forum (www.macworld.co.uk./forum/).

Macworld's buying advice
If you haven't played any TombRaider games at all, try this one – it's the best . If you've got some spare weeks – or even months – to complete it, go buy it.
Gillian Thompson

Terminus

Publisher: Vicarious Visions
www.vvisions.com
Pros: Looks great; multiplayer modes; endless gameplay; insanely complex.
Cons: Slightly buggy; insanely complex.
Min specs: 300MHz G3 or greater; 96MB RAM; OpenGL-compatible video card; Mac OS 8.6.
Price: $65 including shipping, import duty not included (order online)
Star Rating: ★★★★/7.5

I
f the thought of interstellar trading, or living as a galactic mercenary, gets your heart going at warp speed, then Terminus is for you.

It's extremely complex and involving – it'll take a couple of days just to learn to play the game. You really have to learn to fly this virtual spaceship before you can start the game. It isn't one of those point-and-shoot jobs either – it uses a realistic Newtonian physics model to simulate space flight (well apart from the odd vortex gate). When flying, a joystick is advisable – it'll make life less complicated. Even with a joystick, the keyboard is needed for some tasks, such as toggle inertia-compensation and activating vortex gates – don't worry, this sci-fi gobbledegook makes perfect sense when you're playing.

Once pilot training is finished, the newly-qualified recruit must choose a career path. There are four to choose from: space pirate, mercenary- or military-fighter pilot for either Earth or Mars. Each has a different perspective on the story that unfolds – and what a story it is.

It starts in 2021 at the time of the first

Mars mission, and tracks humanity's migration into space. Suffice to say, there is plenty of intergalactic dog-fighting, trading in alien artefacts, mysterious technology, and space politics. Whichever career is chosen, space combat is guaranteed.

I'd like to say how long the game will entertain you, but I haven't finished it – and there's a lot more of it left. The game is massive – it comes on three CDs.

Even when the story is finished, there are other modes to play. You can play on your own, with a friend, or with lots of friends on the Internet. You can even play a free mode – where there isn't a story, you just live and work in this futuristic world. You can take jobs when you want, trade goods – whatever you feel like. Some people will spend an unhealthy amount of time on this endless game option.

It took three years for the programmers to complete Terminus. It's available for the Mac, PC and Linux. While this is admirable, it makes installation difficult. There are no installation instructions anywhere –

Docking pad
Terminus is massive and immersive – it could take over your life.

not on the Web site, not in the 200-page manual, and not in any read-me file. Furthermore, the game needed updating with a patch from the Web site before it would work. The interface is a little clunky, and the cut scenes don't quite join-up like they should.

Macworld's buying advice
If your machine can handle the hefty system requirements, and you can spare 40 or 50 hours at the weekend to play it, Terminus is superb. But it's so immersive that you may miss the rest of the summer.
David "Space Orc" Fanning

EndNote 4.0

Publisher: ISI ResearchSoft   www.isiresearchsoft.com
Distributor: Adept Scientific   (01462 488 886)
Pros: Customizable Library window; auto-completion of entries; preview panel.
Cons: Expensive upgrade.
Minimum specs: Mac OS 7.5.5; PowerPC.
Price: £199; upgrade, £79 (both prices exclude VAT)
Star Rating: ★★★★/7.7

E
ndNote users who worried about the fate of their favourite bibliography manager when Niles Software was acquired last year can rest easy. ISI ResearchSoft has released EndNote 4.0 with a host of new features that make for a solid, if pricey, upgrade.

The roster of changes includes several welcome additions to the Library window. You can specify which fields to display, adjust column widths by dragging, and click on any column heading to sort the references on that field. The Library window also includes a collapsible preview panel that lets you see how references will appear in the final bibliography (see "In style"). Finally, this version grants my oft-repeated wish for a horizontal scroll bar.

ISI has also beefed-up EndNote's search functions. For example, you can save and reload complex search criteria and restrict searches to the first author listed. EndNote 4.0 retains its predecessor's ability to query Z39.50-compliant databases over the Internet or institutional intranets, but it also ships with connection files for more databases – 217 in all.
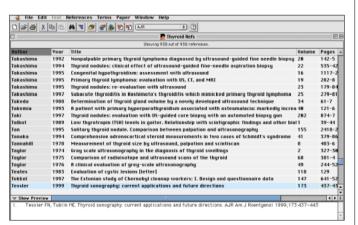
Whenever you add references to a library, EndNote 4.0 saves the authors, keywords, and journals in term lists. As you enter text into a field, EndNote scans the appropriate term list for a unique matching entry and fills in the rest of the text for you. This feature saves keystrokes and minimizes errors when entering references manually.

EndNote's new Style Manager window makes it easier to add new bibliographic styles or edit existing ones, and you can specify which styles you want to appear in the Style menu. I also appreciate EndNote's new formatting options – for example, you can specify font and style settings for individual authors. Visible symbols now represent formatting characters, including tabs and carriage returns, so you can specify precisely how you want the bibliography to appear in your document. EndNote 4.0 also supports hanging indents in bibliography layouts. I did run into a snag when I imported two of our old definitions, however.

Macworld's buying advice
It's gratifying to see ISI continue to improve EndNote's interface and add to its feature set, but the £79 upgrade is a bit steep. This aside, EndNote 4.0 is a solid update to an already excellent research tool.
Franklin Tessler

In style
EndNote 4.0's preview panel displays formatted references based on the currently selected bibliographic style.

Color Laser Jet 8550

Manufacturer: Hewlett Packard
(08705 474 747)
Pros: Prints colour quickly;
auto-calibration; Pantone
matching.
Cons: You'll need a lot of
space for it; too pricey for
smaller offices.
Price: £6,355 excluding VAT
Star Rating: ★★★★/8.4

If you work in a small office, or even at home, colour printing is relatively affordable. A good ink-jet printer is around £200, and, although it is slow and hard to share, the output is amazing.

Unfortunately, scaling up ink-jet technology to work in a busy-office environment doesn't work, and that's where laser printers, such as the Color Laser Jet 8550, come in. It can handle printing for medium to large offices in colour and mono.

Most printers of this type tend to be aimed at either graphics professionals, or general-office duties. General printing is less colour-critical, while graphics professionals demand high-quality colour-matching. Faster printers, such as the 12ppm (pages per minute) Lexmark OptraColor 1200, sacrifice image quality for speed, while models such as the Epson EPL 8000 have a high-quality RIP, but slower output.

Accross the divide

The HP 8550 bridges that gap and combines a real Adobe PostScript 3 RIP (internal) with fast 6ppm output for colour-A4 documents.

Because the 8550 uses a carousel configuration for the different coloured toners, if only one colour is used the carousel needn't turn. This means mono printing is much faster – it can print A4 at 24ppm. The Lexmark model uses a straight-through method for laying down toner, this means there is no speed advantage when printing mono pages.

If you've used a carousel colour-printer before, you may dread the task of changing toner cartridges. The 8550 keeps this simple by storing the cartridges behind a transparent door until they are in the correct position to slide out. To reach each colour, just close the door and press a button that turns the carousel to the next colour. Previous carousel-toner holders often required manually winding the drum forward and lining up the cartridge. This is tricky, so the automatic-carousel turning of the 8550 is definite boon.

Some printers of this size double up as photocopiers, but the 8550 has only an optional scanner attachment.

Kitted up

The 8550 has practically all the features an office colour-printer could need. It can print A3 and even oversize A3, and the 8550 DN model I tested includes a duplex unit for printing both sides of the page. The ethernet is a 10/100BaseT connection, so there's no delay getting the files to the printer. Also, there's a 3.2GB hard disk to store RIPed files.

The paper handling is designed for high-volume printing, with minimum user-intervention. There are four paper trays to hold over 3,000 sheets of paper of various sizes. There are plenty of options available for handling the output, from an 8-bin mailbox to a 3,000-sheet stapler/stacker.

All this makes for a vary capable printer, but it is the colour management that makes it such a good all-rounder. It has automatic Pantone calibration, ideal for printing company logos in the regulation shades. It also has automatic-colour calibration to ensure consistent colour. This kind of calibration means that all users will get consistent colour – not just technically-minded designers.

Macworld's buying advice

If your office is populated by marketing, sales and graphics types, this is an ideal printer. The speed and document handling is ideal for presentations, and the colour management makes it suitable for the art department. The quality of output is very good, but not quite good enough for real high-end colour-proofing. It isn't going to replace a proper proofing device, but what proofing device can print 24ppm?
David Fanning

All you need
The HP Color Laser Jet 8550 is great for design and general office use alike. It's quick, and has loads of output options.

FireWire CD-RW 8x4x24

Manufacturer: OnePro
www.macsol.co.uk
Distributor: New Century
(020 8795 1177)
Pros: SCSI-free; fast;
convenient connectivity.
Cons: Bulky.
Price: £279 excluding VAT
Star Rating: ★★★★/8.5

For too long the only way to use a fast-CD burner with a SCSI-less Mac was to install a SCSI card. USB burners run at a maximum 4x speed, and FireWire burners, though in existence, were not supported by Adaptec Toast. Now, finally, there's a CD-RW that uses FireWire, and a version of Toast that will support it.

Big in evey way

As CD writers go, the OnePro is bulky and not very attractive. This may put off some buyers, but it's the functionality that's important. The ability to store large quantities of data quickly, simply and in a format that just about every computer can read is very compelling.

Adaptec Toast is the thing that makes all this possible. Until the release of the 8-speed OnePro CD-RW, non-SCSI Macs were limited by the fact that USB CD-Rs were slow. Most run at 2x, later models achieved 4x, but USB simply doesn't have the bandwidth for faster speeds. When burning a CD, the stream of data must be constant, otherwise the CD may be flawed. SCSI did a fine job of this, but with the newer machines it is not a standard feature. The thought of installing a SCSI card, even in a G3 or G4, is daunting to many. But, why should you have to when you have state-of-the-art FireWire? Well, now you don't. And, if you need to share the CD-R with other people, you don't need to shut down every time you unplug it – you do with SCSI.

Macworld's buying advice

If you've been waiting for a FireWire CD-RW – as we have at *Macworld* – the wait is over. It is great to be released from the shackles of SCSI, we have fried at least one SCSI card by forgetting it isn't hot-swappable.

Now there're FireWire CD-RWs, we can expect models capable of speeds beyond 8x. Until then though, the OnePro CD-RW is the best machine going. It's just a shame the the design isn't a bit more space age.
David Fanning

Write home
While the OnePro is quick, due to its FireWire port, its size means it's no good for road warriors.

3D animation of 2D designers

Animation Master Millennium

Publisher: Hash   www.hash.com
Distributor: Electric   (01666 825 290)
Pros: Powerful; inexpensive; can build and reuse libraries of animations.
Cons: Intense learning curve; temperamental interface.
Minimum specs: PowerPC.
Price: £199 (excluding VAT)
Star Rating: ★★★★/7.5

Hash attacks
In Animation Master Millennium, you can model in both wire-frame and preview modes. The larger window shows a posed model, the smaller window shows a side detail of the model's face in wire-frame mode.

Modelling and animating organic creatures and objects is a difficult task no matter what program you use, but Animation Master Millennium makes it easier, by providing 3D tools that do more than just rotate logos and shapes. The latest incarnation of Hash's 3D-modelling, animation and rendering tool offers a powerful combination of features and options traditionally found only in more expensive programs.
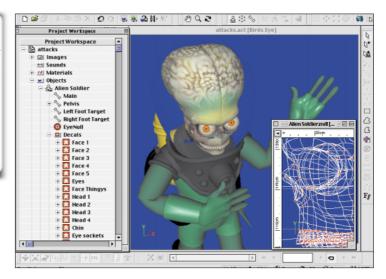
Animation Master models are made up of patches, a major advance in 3D technology. Models defined with patches take up less memory and disk space than traditional polygon-based models, and you can scale and deform them more easily, because equations describe the curves, rather than just a series of straight lines between vertices.

Multi-dimension

Modelling in Animation Master closely resembles drawing in Adobe Illustrator or Macromedia FreeHand, making it easier for artists to handle the transition to the third dimension. To create a patch, click on a series of points in the 3D space – the program then draws a spline curve through those points. Animation Master offers standard lathe and extrusion tools, but you can also join splines by dragging a control point on top of another point and pressing a button – three or four points in an enclosed shape make up a patch. The flexibility of patch modelling makes small tweaks – or even adding limbs – much simpler tasks in Animation Master than in many other modellers.

One disadvantage of the patch system is that you won't find enormous libraries of models in the Animation Master format. You can import DXF-format models from other programs, but this may require so much additional work that you'll find it faster to build models from scratch in Animation Master.

As its name implies, Animation Master excels at creating not only organic shapes, but also ones you can animate. Once you've created a model, you can define animations as reusable actions. Each action has its own timeline, with keyframes that store changes from the original model's position and structure. To create both muscular and skeletal movement, you can either move the model's control points or use linked bone-structures. The CD-ROM includes a model of a standard human skeleton for creating bone structures.

You can apply skeletal and muscular actions to other models, and the pose feature makes it easy to reuse actions. When you define a pose, that definition stores the modifications to the model elements. Attach a pose to a model during animation, and a slider bar lets you control how much of the pose to apply at that particular time.

Follow the path

A second level of animation takes place in the Choreography window, where you position models in relation to each other and then apply and combine actions and poses. To make a character walk across a surface, create a model, define a walking action that moves the legs in relation to the body, insert the model into the Choreography window along with any scenery you want, define a path for the character to follow, and apply the action to the model. An animation of a man walking across a field might consist of a model, a path drawn in the Choreography window, and a walking action. One of Animation Master's strengths is its ability to combine building blocks of objects and simple actions to create complex creatures. With a few mouse clicks, you can make a walking and talking character by combining two actions in a choreographed setting. The actions are separate, so you can stop the walking action at any point, but still have the lips in motion.

Another nice touch is the ability to add sound to the animation timeline. Because Animation Master lets you synchronize action and audio, you don't need a digital-video editor to add sound to movies rendered in Animation Master, nor do you have to make several renderings to synchronize a pre-recorded sound. Scrubbing the timeline in Animation Master works just as in a video-editing program, defining how sound and image are synchronized. With the Dope Sheet feature, you type in text to match the audio track, and Animation Master breaks the words into phonemes – an invaluable aid for the lip-syncing process.

We did run into a couple of annoyances. You must have the cross-platform CD-ROM in the drive each time the program starts up. Also, the user interface needs polishing – it's very tricky to control docking of floating palettes. We found unselected control points small and difficult to see, and the program has subtly different methods for drawing the splines for models and those for animation paths.

Macworld's buying advice

Animation Master Millennium's wealth of features makes it robust, but adds to its complexity – you'll need artistic talent and ample learning time to turn your office into the next Disney or Pixar studio. If your goal is to use animated-3D characters to tell a story, though, Animation Master makes the task about as easy and affordable as it gets.
Darrel Plant

External ISDN

Leonardo USB 2/1

Manufacturer: Hermstedt
(020 7242 4060)
www.hermstedt.co.uk

Pros: No more internal fiddling; no external-power supply needed; looks high-tech.

Cons: Doesn't include Grand Central Pro as standard.

Min specs: Mac OS 8.5, USB.

Price: £699; 4/1 channel model, £799; 4/2 channel model, £899. Grand Central Pro costs an extra £199 (all prices exclude VAT).

Star Rating: ★★★★/8.6

In the dim and distant past, when I was a freelance consultant, my first job was setting up ISDN for a repro house. It wasn't that difficult, but it did require the installation of an internal ISDN card. Proper ISDN devices have always needed to be installed internally – until now.

Hermstedt has released the Leonardo USB – which has all the capabilities of an internal card, but in an external box.

You may think Hermstedt's WebShuttle already provides ISDN via USB. Well it does, but not for peer-to-peer transfers. For direct-file transfers from one computer to another, without going via the Internet, something else is needed. Until now, an internal card, such as the Leonardo ISDN card, would be the only choice – but now Leonardo USB will do the job.

Only slightly bigger than the WebShuttle, the Leonardo USB is sleek, silver and purple. It's powered through the USB connection. This means it must be run either directly from the USB port on the back of the Mac, or from a powered-USB hub. On the front is a row of coloured lights that do a little jig on start-up, then settle down to display various activities – such as connection.

Leo Express is included, which enables connection to other cards running the same software. Grand Central Pro 2.0 (GC Pro) isn't included, but it's available for an additional £199 – if you want to get the most out of Leonardo USB, it's essential. And, GC Pro has full compatibility with all other cards and protocols.

There's no need to use the Leonardo USB only for peer-to-peer connections, it can also be used for high-speed Internet access. Using Multilink PPP, a 128K connection to the Internet is possible, provided the ISP supports it. Fortunately most good ISPs do, at no extra cost. Remember that using both 64K channels costs the same as using two telephone lines. I looked at the two-channel, single-fax port model. For a little extra, there's a four-channel model with a single-fax port, or a model with four channels and two fax ports. The fax capability is controlled by the bundled Fax Express Solo Light software.

If a four-channel 256K connection still doesn't seem fast enough, you can attach up to eight Leonardo USB adaptors at once. You'll need some powered USB hubs to achieve this, but it would give 32 connections of 64K each. This is the equivalent to having a 2Mbit connection.

Macworld's buying advice

The external Leonardo USB is actually cheaper than the internal PCI version, making it a good deal. It's more expensive than the less functional WebShuttle (which sells for £159). But, depending on how it's used, the Leonardo USB save it's cost in couriers in weeks.
David Fanning

Forestia Junior ★★★★/8.7

Daddyoak's (www.daddyoak.com) Forestia Junior is for children aged between four and seven years old. It's similar to Forestia, but with easier puzzles and games to play. It needs a PowerPC Mac with 32MB RAM and Mac OS 7.5 to run.

Forestia Junior is inhabited by all kinds of forest creatures who will entertain kids by telling stories and setting tasks. None are too taxing, but all are fun. Forestia Junior is a beautifully put together game. Noisy kids will be mellowed by the soothing music and gentle voices – a bonus for any parent. It costs £19 including VAT.
Wavehill (020 8305 0456) www.mediac.co.uk

Web-to-Palm converter

AvantGo

Publisher: AvantGo
www.avantgo.com

Pros: Free; simple to use; very useful.

Cons: You'll use your Palm device so much, you may find battery life suffering.

Min specs: Palm OS.

Price: Free

Star Rating: ★★★★★/9.0

AvantGo could be the killer app that makes Palm devices indispensable. I know this may sound unbelievable, but it has changed the way I use my Visor: it's no longer a novelty gadget that keeps my diary and telephone numbers – I now look at it daily to check information.

The idea behind AvantGo is simple. It grabs pages from the Internet, makes them Palm OS-friendly, and updates the pages when the device is synced. This isn't a new idea – programs like WebWhacker and the Adobe Acrobat Web Capture plug-in can download Web sites for offline reading – but AvantGo makes the information readable on a small screen.

Setting up AvantGo is a breeze – just go to www.avantgo.com, and download the application. When the application is loaded, simply choose the information you'd like to receive. There are around a thousand sites that have been rejigged to be Palm-friendly – all are listed at AvantGo – and more are being added by the day. Currently supported sites include ITN, Fox News, Showbiz Scoop, and, best of all, www.macworld.co.uk – where you can get news, reviews and opinions from *Macworld* experts. If your favourite site isn't listed, it can be manually added to your list – though it may look odd.

Graphics can been downloaded if there's enough spare memory. Also, the number of pages you want to download from a site can be set – anything from one to 255 pages.

If you're on the road, there are a number of helpful sites. For an upcoming trip to the New York Macworld Expo, I have loaded City NY Mag, CitySearch New York, and the indispensable DrinkBoy – for when the bartender forgets how to make a Manhattan.

Macworld's buying advice

This service is free, so it won't worry your wallet. AvantGo quickly becomes indispensable. The only drawback is that, because I spend twice as much time using my Visor, the batteries run out quicker. It's worth signing up for, if only for the fantastic *Macworld* offline service.
David Fanning

Internet in the palm of your hand
AvantGo takes pages from the Internet a makes them Palm-freindly, so now there's no reason to miss Macworld.co.uk.

Ultimate iMac

Tons of ways to make your iMac (or any modern Mac) the best it can be.
By Sean Ashcroft

Maybe, more than any other machine, iMacs have revolutionized personal computing – and not just because they look so damn good: they pack as much content as style. The iMac's one-stop-shop functionality continues to appeal to first-time computer users and PC converts alike. Its plug-in-and-go nature – especially with zippy Internet access – is what continues to underpin its success.

The iMac may not embrace PCI-card expandability, but this doesn't mean it isn't expandable, because the cornucopia of third-party USB and FireWire hardware – and great Mac software and games – can take your iMac's functionality through the roof. On top of this, of course, there's the iMac's unbeatable bundled functionality: in-built modem, iMovie, browser software and AppleWorks, to name a few. It's the ultimate consumer computing package... nearly...

Today, iMac owners can get as serious about their machines as they want: the only limits are your time, imagination and budget. From simple surfing and home-accounts management, to Web-site authoring or advanced digital editing – your iMac can punch at the weight of your choice. So, sit back, put up your feet, and discover how to skipper your machine to new and exciting heights.

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Happy snapper iMac

You're an iMac owner and have been bought a digital camera for your birthday. Lucky you. But what can you really do with it? What can't you do? Even low-end ink-jets and digital cameras give great results these days – and once the image is on your iMac the fun's just beginning. All iMacs come with great image-editing apps: the early models came bundled with Kai's PhotoSoap, while later ones ship with Adobe PhotoDeluxe. If you simply want granny in Australia to see your digital pictures of her latest grandchild, then simply post them on the Internet using Apple's iTools Net suite.

Serious snapper iMac

If you love creating and manipulating quality images, then the iMac is your machine. In conjunction with a digital camera and a photo-quality ink-jet – as well as some practice – you'll never need to use Boots' photo service again. And there's more good news – the price of digital cameras and decent ink-jets is tumbling as fast as their quality is rising. Once you've captured your images, then why not have further fun, by delving into the world's top photo-editing application – and discover why the Mac platform is the preferred choice of graphics professionals the world over.

USB Cameramate 5.1
Microtech's £69 Cameramate USB card reader (www.microtechint.com; New Century Computers, 020 8795 1177) makes digital photography even easier. Simply take your tiny data card out of your digital camera, and pop it in the card reader. It then appears on the desktop like an extra drive. Downloading 16MB of data takes seconds, rather than minutes – or even hours. There are two competing formats of data cards: CompactFlash and SmartMedia. Microtech has thankfully made its card reader compatible with both formats. For more information, see *Macworld*, February 2000.
★★★★/8.7

Kai's SuperGoo
ScanSoft's Kai's SuperGoo (£13; 0870 870 8085) is the successor to PowerGoo, the fun program that used a variety of crazy tools to distort features. The program can be used to melt down anything that can be put into a picture – there isn't much more you can do to distort an image. Warping people's faces is always tremendous fun. You can also create freaky faces by combining different facial features from the face libraries or from your own imported pictures. A range of brushes and effects apply the magic, while other buttons control the zooming, panning, mirroring, text, brushes and output.
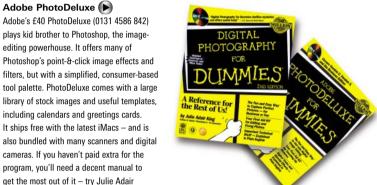For more information, see *Macworld*, October 1998.
★★★★★/9.3

Apple iTools
Apple's iTools (www.apple.com/uk/itools) is a free and useful suite of Web-based software tools for all users of Mac OS 9.
iDisk is what is makes iTools great. It gives 20MB of storage on Apple's own servers that can be used to keep any of your files. Forget floppy disks, iDisk lets you shuttle files between home and work. In conjunction with the HomePage iTool, iDisk enables you to build your own personalized Web site – see iMac's screenshot above.
No knowledge of Web design is required, as Apple has some good-looking templates catering for photo galleries, CVs, invites, baby announcements, and iMovies. iDisk and HomePage are very slow, but the results are impressive.
iDisk also lets you make iCards (fun, photographic email greetings cards) with your own digital snaps. Send your friends iCards displaying your favourite photos – great when combined with SuperGoo.

Adobe PhotoDeluxe ▶
Adobe's £40 PhotoDeluxe (0131 4586 842) plays kid brother to Photoshop, the image-editing powerhouse. It offers many of Photoshop's point-&-click image effects and filters, but with a simplified, consumer-based tool palette. PhotoDeluxe comes with a large library of stock images and useful templates, including calendars and greetings cards. It ships free with the latest iMacs – and is also bundled with many scanners and digital cameras. If you haven't paid extra for the program, you'll need a decent manual to get the most out of it – try Julie Adair King's *Adobe PhotoDeluxe for Dummies*. Her *Digital Photography for Dummies* is also highly recommended (both £24, IDG Books). For more information, see *Macworld*, April 1998.
★★★/6.7

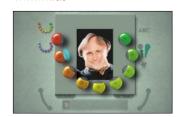## Epson PhotoPC 650 ▼
The £224 PhotoPC 650 (www.epson.co.uk; Ingram Micro, 01908 260 422) is a lot of digital camera for the money. Its 1,152-x-864-pixel resolution allows you to print images up to 5-x-7 inches with more-than-satisfactory results. An 1.8-inch LCD monitor gives instant preview and playback, as well as providing information regarding the number of pictures remaining, battery life and resolution-quality mode. Auto-flash is handy, too. An 8MB USB-enabled CompactFlash card by Lexar Media comes as standard with the camera – but you'll need to buy a card reader, which will bump the price up a bit. The 8MB card can store 47 fine- or 88 standard-resolution images. Epson's PhotoPC 650's software bundle also includes the excellent PictureWorks HotShots for retrieving, organizing and enhancing images.
★★★★/8.2

Epson Stylus Photo 870 ▲
Unlike business printing, home printing tends to value quality above speed – which is why the consumer printing market is ruled by ink-jet models and not laser printers. This Epson A4 colour ink-jet (01442 261 144) has a silent-running stepper-motor that prints your images discretely with no noise. It also uses colour-fast inks for longer-lasting prints. The Stylus Photo 870's output is truly outstanding, and is authentically photo quality. At £239, we think that's a bargain. For more information, see *Macworld*, April 2000.
★★★★/8.9

Leonardo USB
Pro snappers will want to send their digital photos all over the place, so should consider speeding up their communications. The iMac's 56Kbps modem is as fast as analogue modems go, but is prey to the Internet's many slowdowns. Hermstedt's Leonardo USB ISDN terminal adaptor (2/1 port configuration from £820; 020 7242 4060; www.hermstedt.co.uk) performs direct file-transfers from one computer to another without slowing down over the Net. It requires no power other than the current from the USB connection, so it must be run either directly from the USB port on the back of your iMac or from a powered USB hub. Bundled software includes Leo Express – which enables connection to other cards running the same software. The ISDN-connection software Grand Central Pro 2.0 isn't included, but it is available for an additional £233. A pricey but powerful speed solution.
For a full review, see page 60.
★★★★/8.6

Kodak DC240i Zoom
Kodak has joined the iMac revolution, with its £499 DC240i Zoom digital camera (0870 243 0270), which is available in any of the five iMac colours. This camera can capture really crisp images, and, because it comes with USB support for the Mac, there's no need for a card reader. The software installation is a snap, and you should be transferring images to your iMac within minutes of opening the box.
This camera is a 1.3-megapixel model, and has a powerful 3x optical plus 2x digital zoom lens. Auto-focus and auto-exposure make it easier to get great results. The viewfinder is a 1.8-inch TFT colour LCD, and there's an optical viewfinder too. The software bundle includes Adobe PhotoDeluxe 1.0 for basic image-editing and the now-discontinued Adobe PageMill, if you're planning to post your images on the Web. Also included is special-effects software for adding sepia tones and borders.
★★★★/7.9

Epson Stylus Photo 2000P ▼
The Stylus Photo 2000P can now produce prints that not only look spectacular, but remain light-fast for 100 years. It has the capability of outputting images that are indistinguishable from photographs, are A3 size, and can be displayed without fear of fading. At £799, the wonders of the Stylus Photo 2000P don't come cheap – but the advantages warrant the extra cash, because it's a true professional tool. For a full review, go to page 45.
★★★★★/9.3

Fujifilm FinePix 4700z ▶
This is a truly compact quality consumer camera, featuring both a real-image optical viewfinder and a two-inch colour LCD monitor for image composition. The 4700z (£649; 020 7586 5900; www.fujifilm.co.uk) boasts automatic and manual focus options. A range of exposure settings – Night Scene, Landscape, Portrait, Auto, Manual, Continuous Shooting and Movie – gives you real flexibility. iMac owners who love iMovie will benefit from the 4700's Movie mode, which allows you to capture up to 90 seconds of moving images with sound. You can create a 25-image index of each movie for quick review. The 4700z comes with a USB cable, so images and footage can be downloaded to your iMac with the minimum of fuss. It also comes bundled with the image-editing software, Adobe PhotoDeluxe 2.0 – although ambitious photographers should consider upgrading to Photoshop (see above).
★★★★/8.3   ▶ page 69

Adobe Photoshop 5.5 ▼
Photoshop (020 8606 4001; www.adobe.co.uk) has always been the industry-standard image-editing application. Images are edited through the use of layers, paths, masking, and a host of filters and special effects that PhotoDeluxe comes nowhere near matching. Photoshop's extensive toolbox also allows its users to apply real craft to their work, through the use of airbrushes, erasers, and rubber-stamping. And Photoshop 5.5 is all you need to save images for the Web. With ImageReady 2.0 now built-in, Photoshop can now handle fancy site-authoring techniques, such as Web animation. The biggest single addition to Photoshop 5.5 is the Save For Web menu item, located on the File menu. Web pros who use Photoshop finally don't have to pay extra for plug-ins to get the basic tools they need. £480 is a relatively small price to pay for such pro-level graphics power. Deke McClelland's £42 *Macworld Photoshop 5.0 Bible* (IDG Books) is recommended to make beginners experts. For more information, see *Macworld*, October 1999.
★★★★★/9.5

Digital video iMac

Apple's ads for its latest iMacs made great play of one thing above all others – it's movie-editing capability. Digital video is the new desktop publishing, so now we can all have a go. The iMac DV and DV SE come with high-speed connectivity FireWire ports and iMovie, Apple's cut-down version of its video-editing powerhouse, Final Cut Pro 1.2. This means that, with a digital camcorder, you can edit and craft your own movies – complete with special effects, soundtrack and titles. When finished, you can save your masterpiece as a QuickTime movie and send it to relatives on the other side of the world via CD or Apple's iTools.

Canon XM1

There are two things that set the £1,350 XM1 digital camcorder (0500 246 246; **www.canon.co.uk**) apart as a semi-professional model. It has a high-quality Canon lens – of course – and images are split by a prism, making for a noise-free and sharp picture. Large stereo microphones on the front of the carrying handle capture the audio. The zoom is a powerful optical 20x – better quality than other camcorders' digital zooms. If you harbour any ambitions of using your camera for paid work, this model offers high-end features on a budget.

For more information, see *Macworld*, May 2000.

★★★★/8.8

Final Cut Pro 1.2.5

If you fancy moving up from the rather basic iMovie software, Apple offers Final Cut Pro 1.2.5. If you're really serious about video, prepare yourself for the serious price: a shade over £800.

Final Cut Pro was released six months ago as a professional video-editing tool. It is geared towards DV (digital video) camera users and has built-in control via FireWire for most cameras. The interface is relatively simple to navigate, though you will need to read the manual – unlike iMovie, which doesn't even have a manual. By the way, if £800 is a bit too steep, you can get a lot more out of iMovie by reading David Pogue's £13.50 *iMovie: Missing Manual* (Pogue Press/O'Reilly 2000).

What you get for the extra trouble, though, is a host of high-end features – enough to turn your Mac into a post-production studio. The addition of 16:9 aspect ratio capability means that you can make your movies look like real Hollywood flicks. Many video cameras have an option to record in a wide-screen mode – for the first time an editing package now supports it. Final Cut Pro allows work in almost any format or aspect ratio because it works in any resolution up to 4,000-x-4,000 pixels.

Another major change to the way Final Cut Pro works is the Reference Movie. This means that a project's file can be scattered on different drives, different computers, and even different countries connected by the Internet. A movie can

Media Cleaner Pro 4.0

Terran Interactive's £400 Media Cleaner Pro 4.0's claim to be an all-round media-compression facility rests mainly on its superb video capabilities. It's the only media-compression program offering a fantastically high degree of configurability for compressing and re-purposing video, audio and still-images in a wide range of formats. Media Cleaner Pro 4.0 also includes capabilities for still-image processing. It also supports direct-to-tape DV output via FireWire – making it the perfect complement to an iMac DV. Version 4.0 (**www.terran.com**; CU, 020 8358 5857) comes with an export plug-in for Adobe Premiere and direct export capabilities from Avid and Media 100 systems.

For more information, see *Macworld*, October 1999.

★★★★/8.4

be pieced together using different media. Only when you output the movie, do the whole files move to your drive. Before then, you work from low-resolution clips. Larger projects are made possible because less local disk space is required.

One of the more important features for professional movie makers is native YUV processing. YUV is Luminance-Bandwidth-Chrominance, the three things that together control the colour fidelity of a video clip. Final Cut Pro now gives you a way to preserve the settings of the original footage, rather than have it all comply to a setting from within the application. This may not make a difference to home users, but at the pro level it is a must have feature.

Final Cut is able to output very high-quality video right now, but it needs to render the footage first, which takes time. Matrox is working on an accelerator card to enable real-time editing of digital video on the Mac. This is a major step forward for Final Cut, because the faster it works the more high-end users will take advantage of the Mac's powerful abilities.

Final Cut Pro is quite an amazing application. If you aspire to become a professional editor, Final Cut Pro is an ideal choice. It can be as simple as you want, yet remains scaleable for professional quality productions.

★★★★/8.4

JVC GR-DVL107

JVC's entry-level digital camcorder is compact, does its job well, and, most importantly for iMac owners, it's DV-in and out (via FireWire/I-Link). For around £750, it's one of the most competitively priced models around (**www.jvc-europe.com**; Direktek, 01494 471 100).

The DVL107 has an 800,000-pixel CCD and a high-resolution LCD colour monitor for framing shots. Although it's churlish to expect too much of a low-end camcorder, the 107 has enough to help you capture quality images. These are recorded on to MiniDV-tape.
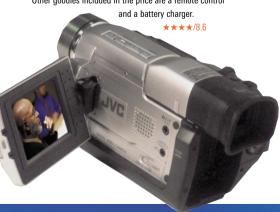
One nice touch is the built-in auto-lamp, which kicks-in when lighting conditions are murky. The light is diffused, too, so subjects don't look like they're in a theatre spotlight. Long-play mode lets you squeeze 120 minutes from a single cassette. Unless you're running the camera off the power adaptor, the batteries won't last this long.

One thing I did like about this camera is its decent range of fades and wipe effects – more numerous than those found in iMovie. Fade/wipe duration can also be edited by holding the recording button, giving even more control. With 12-bit audio, you can customize your sound track, adding a narrative or soundtrack over the original.

There is also a nice range of shooting modes that can give movies a tailored feel. Twilight makes evening scenes look more natural, while Black-&-White will give an art-house look. There's also Strobe and Video Echo settings for giving footage a fantasy feel. If you're not too bothered about adding title sequences, these features mean you barely need iMovie or Final Cut Pro to edit your movie.

Colour reproduction is impressive, helped by this camera's white-balance functionality. White balance refers to the correctness of colour reproduction under various lighting conditions. If the white balance is correct, all other colours will be accurately reproduced. There are five white-balance settings, covering most conditions under which one is likely record video.

Other goodies included in the price are a remote control and a battery charger.

★★★★/8.6

Internet iMac

The Internet puts the "i" in the iMac, and goes to the heart of what these machines are all about: ease of Net access. With its built-in 56Kbps modem and bundled browser software, the iMac has introduced more households to Internet surfing than any other machine. But why stop at surfing? On an iMac, you can run powerful Web-authoring software software that will have you adding to the World Wide Web, instead of just surfing it. Serious surfers should consider bypassing the modem for a speedier ISDN connection, care of Hermstedt's good-looking WebShuttle.

Web-editing applications
Today's iMacs ship with a free copy of Adobe PageMill – a Web-page layout program that can do the job but has been overtaken by far-more sophisticated applications. Adobe's GoLive 4.0 (£220; 020 8606 4001; **www.adobe.co.uk**) and Macromedia's all-rounder Dreamweaver 3/Fireworks 3 Studio bundle (£329; **www.macromedia.com/uk**; CU, 020 8358 5857) are the two front runners if you want to have a serious Web editor that's still easy to use. Both hide the nasty HTML coding that puts many people off making their own Web site, using instead simple What-you-see-is-what-you-get (WYSIWYG) layout tools. Professional webmasters can still access the raw code, so both programs grow with your increasing expertise and requirements.

It's a sure bet that you'll be adding some graphics to your Web site, so you'll need to invest in a decent tool for getting your online pictures and animations just right. Adobe's Photoshop 5.5 has some fine Web-graphics features on top of its print-based image-editing tool set. Macromedia's Fireworks 3 is dedicated to Web graphics, and is part of the Studio bundle with Dreamweaver.

IDG Books publishes several superb guides to designing Web sites. There's a *GoLive 4.0 Bible* and *Dreamweaver 3 Bible*, both £36; as well as a £24 *Dreamweaver 3 for Dummies*. Other decent Web-editing books include the £18 *Web Design & Desktop Publishing for Dummies* and £42 *Web Design Studio Secrets*.

GoLive 4.0 ★★★★★/9.4 For more information, see *Macworld*, May 1999. Dreamweaver 3/Fireworks 3 ★★★★★/9.4 For more information, see *Macworld*, December 1999.

Hermstedt WebShuttle ▶
Bored with the Internet's bandwidth limitations? You need to step-up to an ISDN line. Supporting dual-channel ISDN access at 64Mbps per channel, the £185 WebShuttle is the most Mac-friendly ISDN terminal adaptor available (Hermstedt, 020 7242 4060). ISDN terminal adaptors are essentially external ISDN cards that work in a similar way to modems. To use one for connecting to the Internet, you need BT's Highway service and an ISP that supports ISDN connections.
For more information, see *Macworld*, November 1999.
★★★★★/9.0

UniTray & UniMouse ▲
Repetitive strain injury is an all-too-real matter for many whose working days are spent in from of a computer screen. Even Web browsing can become uncomfortable after an hour or two. With its silicon-filled wrist-rest, the £17 Contour UniTray can help on this front. It is one of the most comfortable mouse-mats *Macworld* has ever come across. The gel pad is adjustable in height, so you can make it just right for you. And, of course, it'll match your Mac.
For more information, see *Macworld*, October 1999.
★★★★/8.6
The one grumble heard from iMac users more than any other concerns the yoyo-like mouse. If you hate it, then ditch it, and opt for the ergonomically styled USB three-Button programmable UniMouse. Available in the six iMac colours, this £30 mouse provides comfort, function and style. This mouse is ideal for right- or left-handers, offering "universal" palm support.
For more information, see *Macworld*, July 2000.
★★★/6.9
Both are available from Mygate, 020 8297 9699 (**www.contourdesign.com**).

Microsoft Internet Explorer 5.0
(see iMac screen above)
iMacs ship with both the Netscape and Microsoft Web browsers, but not with the latest versions of these key Internet applications. The latest version of Microsoft's Internet Explorer has some great features, including the Internet Scrapbook, which saves entire Web pages singly or in collections in an easy-to-access area. One extraordinarily useful feature is IE 5.0's text-display capability. The application automatically displays Web pages at the 96dpi Windows standard display – another step in reducing browser incompatibilities. Text can be displayed at up to 500 per cent, marking an end to pages full of tiny, hard-to-read Windows-created text. This move should enhance many users' Web-browsing experience. You can get the very latest Web browsers and email clients – from both Netscape and Microsoft – free on *Macworld*'s cover-mounted CD every month.

Microsoft Outlook Express 5
Microsoft's latest update to its email client, Outlook Express (OE) 5 Macintosh Edition, is much-improved over version 4.5. Notable improvements include: a redesigned Address Book; an enhanced Address AutoComplete function; and simplified set-up and configuration of multiple accounts. This latest release also includes brand-new features, unique to the Mac, such as an advanced search feature, a Junk Mail Filter to control spam, a Mailing List Manager, and integration with Palm OS devices. Another noticeable improvement is an enhanced QuickFind field, that automatically filters messages in your inbox on the basis of text strings. This feature works on both email and newsgroups. When a recipient has multiple email addresses, a cascading menu displays choices. When sending email to groups, double-clicking the icon displays a window listing each recipient – particularly helpful when you don't remember who's in a specific group. ▶page 72

Games iMac

A couple of years ago, computer games were something you played on a PC, but the iMac has changed all that. Gaming has never been so good for Mac fans. Smash-hit titles, such as Quake, Tomb Raider and Championship Manager, are now available for the Mac. And don't forget, bundled with your iMac is Pangea's classic arcade game, Bugdom. Owners of newer iMacs will enjoy superior gameplay quality. This is because the later machines come with a Rage Pro graphics-acceleration card, while earlier 233MHz models contain the capable, but less powerful, Rage II card.

Descent 3
Fans of Outrage Entertainment's first two Decent games will love its latest release: Descent 3 (£34, Softline 01372 726 333) starts where version 2 left off – with your ship drifting in deepest space. As before, you navigate your craft around labyrinthine, subterranean levels and get into shoot-outs in confined spaces. The missions in Descent 3 are more absorbing than the old mine-based search-and-destroy gameplay. Storylines are more involving and complex. Not only do you have to dodge oncoming trains and avoid enemy outposts as they explode around your ears, but there are keys to be found too. The choice of weapons is also wonderful – the napalm cannon is a pearler. Descent 3's enemy robots are scarier than ever. Some now know when they're outgunned, and run for help, while others are mad-dog mean and will look to tear you apart. The thiefbot is sneakier than ever, and will nick your weapons at the drop of a bionic hat. Descent 3's powerful graphics engine means the game looks better than its predecessors, and can venture outdoors.
★★★★/8.3

Saitek Cyborg 3D Stick
The £45 Cyborg 3D Stick (01454 451 900) is a dream product for lovers of flight-based computer games. Not only does it boast as much functionality as the average cockpit, but it is fully adjustable: its palm-rest can be moved up or down to suit hand-size, and can also be moved to suit right- or left-handers. Totally plug-&-play, it has its own processor, which eases the burden on your iMac. The handle has twist sensors for rudder control, a throttle on the base of the stick, ten buttons, and an eight-way hat switch.
★★★★/8.4

Harman/Kardon-Apple iSub
The iSub (0800 600 6010; www.harmankardon.com) is made for Apple by speaker specialists harman/kardon – who also make the in-built speakers for the latest iMacs. As you can see, it was designed by the same man who brought you the iMac, Brit Jonathan Ive. The great thing about the 20W iSub – apart from the fact that it looks so cool – is the way it adds new dimensions to the iMac. DVD movies have a cinematic sound, and iMac gaming is far more immersive with the added audio depth. The iSub is for use only with the new 350MHz iMac, iMac DV and iMac DV SE, however. You will also need to install Mac OS 9. The iSub costs £79 from the Apple Store (www.apple.com/uk), but there's a deal on right now where you can get one for the ridiculous price of £9 when buying a new iMac DV.
For more information, see *Macworld*, May 2000.
★★★★/8.9

Chessmaster 6000
Mattel's Chessmaster 6000 (£29; Softline, 01372 726 333) reigns as king of the Mac chess world, and is a compelling way to learn the game and sharpen your skills. Beginners can start with the program's tutorials, written by renowned teacher Bruce Pandolfini. And Chessmaster 6000's powerful engine makes it a tough opponent for even advanced chess players. But if you want heavy analysis of moves and strategies, you won't find it here. Chessmaster 6000 introduces rated play, a fun concept for those who reckon they'd beat Big Blue – you play games against computer personalities, and earn your own performance rating. Unfortunately, the only way to play with another human is to share a keyboard – cosy.
★★★★/7.2

Unreal Tournament
Infogrames' Unreal Tournament (£39; Softline, 01372 726 333) is a richly textured action game, with a fantastic array of lighting effects, weapons, and weathers, as well as a selection of indoor and outdoor locales. You can also choose from an impressive cast list of characters. For Net gaming, UT has an simple server-finding menu built in, making life easy – pit you wits and arsenal against Net opponents in locations, including battleships, space, cities, fortresses, and caverns.
For more information, see *Macworld*, January 2000.
★★★★/7.9

Future iMacs – bigger screen, faster processors?

Apple's iMac is its most successful computer ever, selling well over a million since October 1998's first Bondi Blue baby. Despite some neat re-styling and superb added features with last year's DV iMacs – an overhaul could be on the cards in the near future.

New York's Macworld Expo (July 18-21, 2000) is a possible launch pad for the rumoured new iMac. Web reports suggest a possible increase in screen size (from 15 to 17 inches) as the most radical change – but Apple is unlikely to toy too much with a proven success. We've heard these rumours before. Speed bumps to 500MHz – and more – are another possibility. It might also be your last chance to snap up one of the bargain entry-level (non-DV) iMacs.

Apple is ultra secretive about its new products. The iMac may remain in its present form for months, or it might get faster or bigger

a week after this magazine hits the streets. We don't know right now, but we'll be covering Macworld Expo in force. So, visit Macworld Online (www.macworld.co.uk) on July 20 – and see if the iMac, or any Mac, has had a makeover.

All these extras, however, will remain compatible.

iMac storage options

iMac detractors continue to grumble about the lack of a built-in storage device. These days, there are many low-cost remote-storage options for iMac owners – and plenty of higher-end ones, too. Whether you want to save text files on a 1.4MB floppy, or space-heavy graphics files on a 650MB CD-RW, USB and FireWire open the way for storage peace of mind.

Removable storage
The iMac's lack of a floppy drive annoyed many, but email is more than capable of transferring mini files. Larger file transfers (over 2MB) require a different removable-storage medium. You can buy an external floppy drive (from £59) if you really must stick to that ageing format. But we'd recommend you consider the Zip format, or move to CD-R.

Zip disks are available in either 100MB and 250MB sizes. The 100MB drives are cheaper (about £99), but you should think ahead and buy the 250MB drive that accepts either format.

Iomega's £128 **Zip 250 USB** (www.iomega.com; 0800 973 194) is a sleek and useful storage option for iMacs. USB is slower than SCSI and FireWire – a 20MB file will take almost ten minutes to copy from most iMacs – but for home use, speed is rarely a top priority. It also comes with a stand – so you can have it resting on its side if you want to save space on your desk.

The most widely accepted format after floppy is CD. Invest in a rewritable CD-RW, and you get instant compatibility with most modern computers. Zip disks cost from £6 each, so you won't be amazed how few people send them back! Blank CDs will set you back less than a quid.

USB just doesn't have the bandwidth to make anything faster than 4x worthwhile. OnePro's £279 **CD-RW 8x4x24** is FireWire-based, so it's a lot faster at burning discs from your hard disk. This drive burns standard discs at 8x, can rewrite special

compact discs at 4x, and reads discs at 24x. See our review on page 56.
★★★★/8.5

Remember that you'll need one of the latest DV iMacs to use FireWire devices. Otherwise, go for a USB-based CD-R, such as Iomega's £199 ZipCD.

PocketDrive
LaCie's new PocketDrive (above) range of FireWire hard drives (from £349; www.lacie.com; 020 7872 8000) offer storage capacities from 6GB up to 18GB – enough for most users. The interface for the drive is both FireWire and USB, so DV iMacs can connect using either.
For more information, see *Macworld*, July 2000.
★★★★/8.2

Utility and antivirus programs
One of our favourite software utilities is CE Software's £90 QuicKeys 5.0 – which automates your most repeated Mac actions. If you find yourself tapping in the same keyboard commands time after time, QuicKeys could be the answer to your prayers. There are thousands of ways that QuicKeys could make your life easier – for a quick (of course) list of 101 of them, go to www.cesoft.com/products/qk-101uses.html. There's a review of this latest version on page 47 – and a fully working version for you to try on this month's Macworld CD.

A commercial antivirus program is second in importance only to a good disk maintenance and repair product. In this protective area, there are two protagonists: Virex and Norton AntiVirus (NAV).

While **Norton Utilities 5.0** (£99; www.symantec.com; CU, 020 8358 5857) and NAV have almost always been offered as a bundle, as well as individually, the latter is now integrated into Utilities. Norton Utilities includes several life savers. Disk Doctor finds and repairs disk problems; and a new Live Repair facility actually allows you to fix disk problems from the boot volume. UnErase, Volume Recover and Speed Disk are also handy utility tools in this suite. **NAV** can be launched from Utilities' main screen. In terms of operation, NAV is rather invasive – due to its Auto-Protect system extension.

Working in the background, any virus-like activity throws up a dialogue warning of its action. It's essential to keep this turned on – the whole ethos of learning acceptable actions, and building up the Exceptions List, is intrusive. This latest version of NAV can repair boot-block damage, caused by AutoStart worms, and now keeps an on-board history file of previous scans.

Virex 6.1 (£43; www.nai.com; 01753 827 500) has a different approach to scanning for viruses, working solely in the background, without any user intervention. Virex's eUpdate brings the latest virus-definitions file to your Mac posthaste. Equally important is the redesigned scheduler, where you can choose to diagnose, or repair, specific partitions at start up, before shutdown, or at a chosen time or interval.
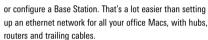
Business iMac

Although the iMac is thought of as a consumer product, more and more businesses are tuning into its potential as a great workplace tool. With powerful built-in 10/100BaseT ethernet capability, networking is no problem – even wireless networking is possible with AirPort. When you're out and about, you can pack a Palm OS handheld organizer, such as Handsprings' £199 Visor. All the Microsoft industry-standard workplace applications are available for the Mac platform. And what would you rather stare at all day, a beige box or a stylish fruit-coloured iMac?

AirPort ▶

Apple's £239 AirPort Base Station and accompanying £79 AirPort Card (0800 600 6010; **www.apple.com/airport**) have heralded a new era of wireless communication. With AirPort installed, a network of Macs can share a single IP address, and up to ten users can connect to one another or to the Web via a single Base Station. You can also wirelessly network AirPort-equipped Macs without relying on a Base Station. Simply remove a bracket to install the AirPort card into another Mac model. After installing the software, you run the Setup Assistant, letting you join an existing network or configure a Base Station. That's a lot easier than setting up an ethernet network for all your office Macs, with hubs, routers and trailing cables.

For more information, see *Macworld*, July 2000.

★★★★/7.2

Essential business applications ▶

All iMacs and iBooks come with AppleWorks 6, a neat suite of business applications that includes a word processor, spreadsheet, database, presentations and drawing tools. But if you want to get serious about business, you'll need Microsoft's **Office 98** collection of applications: Word, Excel and PowerPoint. Microsoft's Office 98 for Mac costs £475 (0870 601 0100). The programs included are fully compatible with their Windows counterparts – great if you have to swap files with a Windows PC. Microsoft will release an updated version later this year, Office 2001 – which promises features that put the current Windows version to shame. See page 23 for more details.

★★★★/8.4

But Office lacks a database – mainly because Microsoft's own Access (in Office for Windows) is nowhere near as good as **FileMaker Pro 5** (from £239; **www.filemaker.com**; 01628 534 100). The company FileMaker is actually owned by Apple, which makes sure that it is as Mac-friendly as it's possible to get. FileMaker claims it's the quickest, easiest way to get an organization organized – and, for once, this boast isn't all hot air. You can also use its Instant Web Publishing capabilities to render database layouts on your intranet with one simple click. FileMaker Pro even looks a lot like MS Office and has a strong Windows following, so it fits snuggly with the Microsoft business suite.

★★★★/8.6

Palm OS handheld ▶

Forget Apple's too-early-for-its-time Newton handheld computer. Personal digital assistants (PDAs) are now highly capable and well within your price range. The most Mac-compatible PDA is also the best anywhere – Palm. The Palm OS makes handwriting recognition a simple matter of an hour's training. Even if you don't use it for making notes on the move, the Palm OS provides you with a contacts database, calendar and numerous other applications that you can keep synchronized with your Mac (see page 93).

Best of all, add a cradle, and you can synchronize your personal information to your Mac at the office and at home. A Mac serial adaptor connects through the Mac's printer or modem port. If you want to input a lot of text – taking notes at a meeting, for instance – you can add fold-away portable keyboards at around £70 (Targus, 020 8607 7000).

There are several brands of Palm PDA available – including Palm's own and a new range from Sony. The Palm Vx is the best-looking of all the PDAs – it weighs just 100g and is only 4mm thick.

The Palm IIIc brings colour to the PDA screen, allowing you to drag JPEG images around with you and wow your mates. Send *Macworld* a Star Letter, and you'll win one of these lovelies (see page 10). Handspring's Visor has an excellent expansion slot, called the Springboard. You can buy mobile-phone attachments, MP3 players and many more useful extras for your Visor.

For more information, see *Macworld*, May 2000.

Palm Vx: £299   ★★★★/8.7
Palm IIIc: £349   ★★★★/8.7
Visor (8MB): £199   ★★★★/8.9

IDG Books – Macworld discounts

To really get to grips with your iMac – or any Mac, for that matter – you'll need to study your software manuals. Nowadays, many programs don't come with printed manuals – leaving you to learn in a rather haphazard manner. *Macworld*'s writers have come to the rescue with their own expert guides. Our very own Desktop Critic (see page 194) David Pogue, for instance, has written *iMac for Dummies* and several other books. The *Dummies* series is for beginners, but even experienced users have found them useful. And there's a *Dummies* book for just about every program, from *Internet for Macs* to *Digital Video*. Pro users should look out for our *Macworld Bibles* on programs such as Photoshop and Dreamweaver.
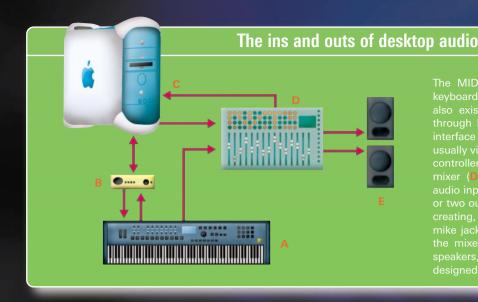
Macworld readers and subscribers can get discounts for all of these at our online Reader Offers section of Macworld Online (www.macworld.co.uk/readeroffers) **or page 110.**

100BaseT ethernet

Few businesses survive with just one computer, so you'll have several iMacs and maybe a few PowerBooks dotted around your office. You will need to interact with all those other computers. All Apple's Macs boast 10/100BaseT ethernet for network connections, so don't put up with 10Mbits per second when you can zip files around at a cracking 100Mbits per second. You'll need a 100BaseT hub as the command centre for your network. We reviewed a bunch of them in our July 2000 issue. An eight-port hub will cost from £129 (D-Link's DES-10050; 020 8235 5432). A 16-port hub isn't much more (AvOffice 11H16; £199; Avsys, 01344 871 329). The best 16-port hub is the £399 10/100 TX/FX (Black Box, 0118 965 5000). It may cost more, but it's also a lot smarter than its rivals.

Make some noise

Turn your Mac into a recording studio — without going broke.

By Jim Heid

Y ou're finishing up a song and tapping your feet as volume meters dance in tempo with the beat. Reaching over to the mixing console, you tweak the volume levels of the piano track. That's better. You rewind your multitrack recording deck, press the record button, and add a few chords from an '80s-vintage analogue synthesizer. Nice. Now there's just one more thing: you patch in a reverberation-effects unit to give the vocal that rich concert-hall sound. Perfect. You're ready to burn a CD and encode your efforts as MP3 files to post on the Web.

Think you're in the control room of a million-dollar recording studio? No — you're sitting in front of your trusty Mac.

The ins and outs of desktop audio

The MIDI controller (**A**) – usually a piano-like keyboard, but guitar, wind, and drum controllers also exist – transmits and receives note data through MIDI I/O jacks, connected to the MIDI interface (**B**). This connects to your Mac (**C**), usually via the USB port. You can attach the MIDI controller's audio output to the audio input of a mixer (**D**), which allows you to turn multiple-audio inputs (vocals, MIDI, instruments) into one or two outputs. To hear and record what you are creating, connect the mixer back to the Mac's mike jack and the Mac's speaker jack to one of the mixer's inputs. Then connect the mixer to speakers, a stereo system, or a pair of monitors designed for close-range audio work (**E**).

Auditioning Sequencers
*Mark of the Unicorn's Digital Performer provides a complete environment for recording, editing, and mixing both audio and MIDI tracks. The Transport window (**A**) offers tape deck – style functions; the Performance window (**B**) shows how much CPU capacity you're using; the Markers window (**C**) lets you set markers for fast access to specific portions of tunes; the Tracks window (**D**) helps you create MIDI and audio tracks, assign instruments, and manage tracks; the Audio Waveform window (**E**) lets you edit audio tracks; and the Mixing Board (**F**) allows adjustment of tracks with sliders and knobs.*

The volume meters and mixing console are on-screen, and you're turning knobs and pressing buttons with your mouse. The multitrack deck and vintage synthesizer are actually pieces of software, and so is the reverb-effects unit. In fact, aside from a music keyboard, a special musical interface, and a pair of speakers, everything in this set-up is a piece of software. Welcome to the virtual recording studio. Outfitting even a modest studio used to mean spending thousands of pounds for recording decks, effects processors, music synthesizers, and other hardware devices. But thanks to the fast processor in the Power Mac G3 and G4, these days, the Mac itself can handle most of what once required dedicated hardware. With the latest audio software, it's easier and less expensive than ever to set up a professional-quality home recording studio – or to add versatile, economical audio tools to your existing pro studio. To find the best music-production tools, I spent several noisy weeks testing more than a dozen software packages. I also created some MP3 audio files to help you hear the best features in action. (Go to www.macworld.com/samples.html to hear my musical creations).

So happy together

A virtual recording studio has many of the same components as a traditional studio, but it runs within the Mac's friendly confines. Here's what you'll need to turn your Mac into a high-tech studio.

Jump in line   A sequencer program, the most essential component of the virtual studio, turns the Mac into a multitrack recording deck. You can build complex arrangements by recording new tracks while existing ones play back. You can also use editing features to fix flubbed notes, transpose keys, and much more.

Sequencers offer huge advantages over conventional tape recording, starting with undo features no razor blade can approach. You also have instantaneous access to any point in a recording – no rewind or fast-forward delays.

Best of all, sequencers provide non-destructive processing: they don't permanently apply your edits and effects to the audio tracks you've recorded unless that's what you want. Non-destructive editing gives you infinite freedom to experiment with sounds and effects, and it's made possible by the speed of today's computers.

Sound off   But a sequencer is nothing without sounds. With software synthesizers, the Mac can mimic anything from a vintage analogue synthesizer to a grand piano to a cello. You generally play a software synth using an external music keyboard plugged into the Mac via some variety of MIDI (Musical Instrument Digital Interface) hardware device for connecting electronic musical instruments to each other and to computers (see the illustration "The ins and outs of desktop audio"). Do you have to own a MIDI keyboard? No, you can create music by entering notes manually in a sequencer program. But it isn't exactly efficient – more akin to typing a letter via hunt-and-peck with the mouse and the Mac's Key Caps instead of simply using your keyboard.

Some software synthesizers are designed for creating dance and rhythm loops – repeating series of bass and drum lines. These programs can help you create infectious dance grooves that would make even Gordon Brown get up and shake that thang.

Software synths are a great way to expand your studio's sound palette. They cost hundreds or even thousands of pounds less than hardware synthesizers, and if you have a PowerBook or an iBook, they're a lot more portable.

Cause and effect   Once you have your sounds, effects plug-ins let you add audio effects, such as auditorium-like reverberation. These software effects are comparable in quality to those of dedicated effects hardware, which can be much more expensive. Effects plug-ins work within your sequencer program, and – as I'll explain shortly – several different plug-in formats exist. Your choice of a sequencer

may very likely depend on the plug-ins you want to use.

All you need is …

Handling massive audio files, generating real-time sound-effects, and simultaneously communicating with external MIDI gear demands a fast computer with a fast hard drive and plenty of RAM. Still, you don't have to break (or even rob) the bank to set up a desktop recording studio.

Power inside An iMac will take you a long way, and even an elderly 604-based Power Mac will run the sequencers I tested. But if you're planning to use software synthesizers and real-time effects plug-ins, you'll want a G3 or better, with at least 128MB of memory. That's because software synths can gobble up 50MB or more of RAM when you have lots of sounds installed. I used a 400MHz blue-and-white G3 with 128MB of RAM for my testing.

I also used Mac OS 8.6, because Apple was still tweaking Mac OS 9, in order to address some audio-related issues. The company was resolving these problems as I finished this article, but they underscore two important points: first, verify compatibility with your Mac model and system software before buying any audio software; second, avoid updating the system software until you're sure your audio tools will run with the latest Mac OS. Also, if my experience was any indication, getting a system to work properly can be a challenge. You'll download update patches frequently as vendors release bug fixes. You'll also become pals with the Mac's Extension Manager control panel, because audio programs can bicker with one another and with other software. This is the bleeding edge, and hemorrhages happen.

Room to grow You'll also need plenty of hard-drive space, because CD-quality stereo files gobble about 10MB per minute. The hard drives that ship in today's iMacs and G4s are big and fast enough to record and play back several simultaneous audio tracks.

But the more tracks you want to play at a time, the faster the hard drive you need. That's because each track is stored as a separate file, and playing back multiple tracks requires the hard drive to access each of those files in real time. Some audio professionals use a second, high-speed SCSI drive to store audio tracks (although an additional fast IDE drive would also do the trick), keeping their programs and system folder on the Mac's built-in hard drive. In either case, optimizing your drive – or drives – regularly will result in quicker access to your tracks.

Radio radio All Power Macs are capable of stereo recording and playback, so to actually hear your efforts, all you need is a set of amplified speakers or some headphones.

But for recording, an inexpensive mixer – a device that takes multiple audio inputs and merges them into one or two audio outputs – will greatly streamline your audio connections, by providing multiple jacks into which you can plug microphones and instruments (see "The ins and outs of desktop audio"). You can also invest in third-party hardware that improves on the Mac's built-in sound circuitry (see the sidebar "Beyond miniplugs: audio hardware options").

Savvy sequencers

I tested three popular audio/ MIDI sequencers: Emagic's £549 Logic Audio Platinum 4.1, Mark of the Unicorn's £549 Digital Performer 2.7, and Steinberg's £329 Cubase VST/24 4.1. (For more information on all the software I tested, see the table "Magical musical software"). unfortunately, a fourth powerhouse sequencer – Opcode Systems' Studio Vision Pro – is currently unavailable because Opcode has recently been bought-out. Previous to this, its customers had to endure poor technical support and a dearth of upgrades. Studio Vision Pro is a fine program, but I won't recommend it until the company's future comes into sharper focus. (If you're new to music on the Mac, check out Christopher Breen's round-up of inexpensive sequencers, such as Steinberg's Cubasis and Mark of the Unicorn's FreeStyle, at www.macworld.co.uk/sequencers/).

Which sequencer is best? Forests fall and battles rage over that question. The easy answer: they're all awesome. But because all three have very similar features and include some effects plug-ins, I based my choice on how the sequencer works. Digital Performer's elegant look-and-feel makes it my favourite; Mark of the Unicorn has sweated the design details to create a program that looks beautiful and is a pleasure to use (see "Auditioning sequencers"). Even Digital Performer's manuals and online help are superior – by contrast, Cubase doesn't come with any printed material other than a "Getting Started" manual.

Plug me in The third-party effects plug-ins and software synthesizers you want to run may influence your choice of a sequencer. Cubase, Logic Audio, and Studio Vision Pro support VST (Virtual Studio Technology), a standard developed by Steinberg. Digital Performer doesn't support VST; instead, it provides its own standard, called MAS (MOTU Audio System).

Third-party VST plug-ins outnumber MAS plug-ins, but most major developers now support both standards, and many also support the plug-in formats high-end audio hardware such as Digidesign's Pro Tools use. What's more, two available MAS plug-ins let you run VST plug-ins within Digital Performer: AudioEase's $30 VST Wrapper for MAS 1.01 and Cycling74's £59 Pluggo 2.0.8. My experience with both was mixed – I was able to run many VST effects within Digital Performer, but VST software synthesizers sometimes misbehaved or required workarounds.

Bottom line: don't count on a VST adaptor, particularly for software synthesizers. Even though Digital Performer's design and interface are superior, you may prefer Logic Audio or Cubase if your projects demand a VST-format plug-in.

Plucky plug-ins

Effects plug-ins, that tap into a sequencer to modify the sound of the audio tracks you record or import, are usually sold in bundles of about four to six effects. You'll now find software equivalents for all mainstream hardware effects devices, including reverb for adding room reverberation; compressors and limiters, which add punch to vocal tracks; equalizers for boosting or lowering certain frequencies; and flangers and phase shifters, used to add rich, swirling textures to instrumental tracks.

Smooth sounds You can also find offbeat plug-ins that don't necessarily have parallels in the hardware world. Waves' MondoMod (part of the £649 Pro-FX Plus bundle) creates stereo effects ranging from a gentle vibrato to a rotating Leslie speaker to a 45-rpm record played off-centre. And AudioEase's $199 Rocket Science Bundle 1.0.2 includes both Roger, a plug-in that adds speechlike vowel sounds to audio tracks, and Orbit, which lets you move sound within a three-dimensional space. Then there's the amazing Pluggo, which creates everything from reverb to robotic speech. Its low price belies its quality and usefulness – it's got something for just about any project, and its ability to run VST plug-ins within Digital Performer (albeit imperfectly) is a real bonus.

As I've previously mentioned, all of the sequencers come with a number of plug-ins that provide basic reverb, compression, and further sound-processing functions. But in terms of audio quality, these bundled plug-ins fall short of the third-party effects I tested. If you're after the best possible sound quality, check out the £299 TC|Native Bundle 2.0, from TC|Works, or the £399 Native Power Pack, from Waves. I'm partial to the TC|Native Bundle's interface, but both products provide superb reverb effects, powerful equalization plug-ins (which enable you to adjust specific frequency ranges – to boost bass and high frequencies, for example), and more.

Almost all of the plug-ins I tested are available in downloadable trial versions, so you can audition them yourself to find out how they work with your tunes.

Snappy synthesizers

If you're like most musicians, you're always on the prowl for new sounds – and software synthesizers deliver them. Instead of paying £600 or more for additional keyboards or sound modules (sound-producing circuitry you can attach to MIDI keyboards), for around £100 you can get a more flexible instrument. Once you've installed a software synthesizer, its name appears in your sequencer alongside your actual MIDI instruments, and you play it using the keys on your MIDI keyboard (see "MIDI magic"). When everything is purring, it's easy to forget that some of your instruments are actually just programs running on a Mac.

Dramatic pause Alas, everything doesn't always purr. A software synthesizer can bring an otherwise-fast Mac to its knees. One potential problem is latency – noticeable delays between when you press a key and when you actually hear its note. Generating high-quality sounds in real time is a processor-intensive job requiring almost as many calculations as Bill Gates's home-improvement spreadsheet. Slower, pre-G3 Macs are particularly

Boot up and get down
Popular among musicians who create dance music, Propellerhead Software's ReBirth digitally re-creates two classic drum and bass synthesizers from Roland Corporation. In one cool-looking window, you get two TB-303 bass synthesizers (A and B), a TR-808 drum machine (C), and a TR-909 drum machine (D). You make dance tunes by creating note and rhythm patterns and then switching between them using the Pattern buttons along the left edge of the window, simultaneously twiddling each section's knobs to change the sound's characteristics.

MIDI Magic
Software synth Pro-Five 1.0, a Native Instruments product distributed by Steinberg, re-creates the Sequential Circuits Prophet 5, a classic analogue synthesizer popular in '70s and '80s music. Like the original, Pro-Five provides two tone-generating oscillators (A) and a filter section (B), which modifies the synth's sound with harmonics and resonant sounds. And you can change sounds by twiddling its knobs.

Magical musical software

Company	Product	Star Rating	Price (inc VAT)	Contact	Free trial version	Comments
Sequencers						
Emagic	Logic Audio Platinum 4.1	★★★★/7.9	£549	Sound, 01462 480 000, www.emagic.de	n	Powerful but difficult to learn; very good bundled effects.
Mark of the Unicorn	Digital Performer 2.7	★★★★/8.4	£549	MusicTrack, 01767 313 447, www.motu.com	n	Best mix of power and ease of use; doesn't support VST plug-ins.
Steinberg	Cubase VST/24 4.1	★★★★/7.9	£329	Arbiter, 020 8202 1199, www.steinberg.net	y	Powerful but cumbersome; best VST compatibility; no printed manuals.
Software synthesizers						
BitHeadz	Unity DS-1 2.0	★★★/6.1	£249	Turnkey, 020 7379 5148, www.bitheadz.com	y	Ambitious software sampler with many expansion sounds available.
	Retro AS-1 2.0.1	★★★/5.0	£129	Turnkey, 020 7379 5148, www.bitheadz.com	y	Powerful analogue-synth simulator;tested version was finicky.
Koblo	Stella9000 2.5	★★★★/7.8	£149	Turnkey, 020 7379 5148, www.koblo.com	y	Rich sound; extremely flexible design; cool and simple user-interface.
Native Instruments	Dynamo 1.0	★★★★/7.7	£99	Turnkey, 020 7379 5148, www.nativeinstruments.com	y	25 rich-sounding software synths in a single package.
Steinberg	Model-E 1.0	★★★★/7.8	£149	Arbiter, 020 8202 1199, www.steinberg.net	y	Rich retro-sounds and a great interface; supports VST plug-ins only.
	Pro-Five 1.0	★★★★/7.8	£149	Arbiter, 020 8202 1199, www.steinberg.net	y	Amazing re-creation of the vintage Prophet 5 analogue synth; supports VST plug-ins only.
	ReBirth RB-338 2.0.1	★★★★/7.8	£149	Arbiter, 020 8202 1199, www.steinberg.net	y	Best bass-and-drum rhythm machine; works with all major sequencers.
Effects plug-ins						
Arboretum	Ionizer 1.3	★★★★/7.6	£367	Unity Audio, 01440 785 843	y	Excellent noise reduction and equilization.
AudioEase	Rocket Science Bundle 1.0.2	★★★/6.4	$199	www.audioease.com	y	Three fun, offbeat plug-ins; for MAS only.
	VST Wrapper for MAS 1.01	★★★/6.0	$29.95	www.audioease.com	y	Economical way to run VST plug-ins under MAS, but Pluggo gives better results.
Cycling74	Pluggo 2.0.8	★★★★/7.6	£59	SCV, 020 7923 1892, www.cycling.com	y	A winner with 74 great plug-ins; can run VST plug-ins under MAS.
DUY Reasearch	DUY Everpack 1.2	★★★/6.4	£299	Unity Audio, 01440 785 843 www.duy.com	y	High-quality reverb; tube simulator adds warmth, especially to vocals.
TC|Works	TC|Native Bundle	★★★★/8.4	£299	Arbiter, 020 8202 1199, www.tcworks.de	y	Superb reverb, equalization, compression, and more.
Waves	Native Power Pack	★★★★/8.4	£399	SCV, 020 7923 1892, www.waves.com	y	A classic plug-in bundle with great reverb, compression, and equalization.
	Native Power Pack II	★★★★/7.8	£399	SCV, 020 7923 1892, www.waves.com	y	Warm, analogue-like equalization and compression; MaxxBass adds bass emphasis.
	Pro-FX Plus Bundle (ModoMod)	★★★★/.7.8	£649	SCV, 020 7923 1892, www.waves.com	y	Turns solo vocals into multipart harmonies, adds rich chorusing effects, and more.

y = yes,
n = no.

Audio hardware options: beyond mini-plugs

Even though the Mac's built-in audio circuitry sounds great, for audio professionals it falls short. For starters, it's limited to a maximum sampling rate of 44.1KHz and a sampling resolution of 16 bits. Sampling rate refers to how many digital "snapshots" of a sound a device takes per second; generally, the higher the sampling rate, the better the ability to capture high-frequency sounds. Sampling resolution refers to how many bits describe each sample – more bits per sample result in a more accurate representation of the original sound.

The 44.1KHz, 16-bit standard for compact discs sounds excellent. But to get the very best quality, pro-level audio gear typically uses a sampling rate of at least 48kHz and a sampling resolution of 24 bits.

Another limitation of the Mac is that it lacks digital audio inputs and outputs. To get your final efforts out of a Mac and onto digital audiotape (DAT) for subsequent mastering – the final process of preparing audio tracks for mass duplication – you'll need to connect your Mac's speaker jack to the DAT recorder's audio-input jacks. This forces your music through additional digital-to-analogue and analogue-to-digital conversions, which introduce very small (but perceptible) amounts of distortion. To prevent this degradation, it's always better to keep an audio signal in the digital domain when transferring it between devices.

The hardware way Although audio hardware that succeeds in overcoming these limitations has been available for years, it has tended to be expensive.

No longer. I tested two sub-£900 products: the £880 Digi 001, from Digidesign, and the £699 SoloEX, from SeaSound. Both offer pro-quality sound, have multiple audio-inputs (eliminating the need for an external mixer), and act as MIDI interfaces.

Each of these products consists of a PCI expansion card that provides higher-quality audio circuitry than the Mac, and an external box for connecting music keyboards, microphones, and other noisemaking devices.

PCI-only digital sound cards cost less, but you'll lose most of the connections you'd get with the external box). Both provide digital inputs and outputs in the form of S/PDIF (Sony/Philips Digital Interface Format) connectors, common on DAT recorders and other digital gear.

Both alsolude software. The Digi 001 comes with Pro Tools LE, a scaled-down version of the Pro Tools software that accompanies Digidesign's high-end computer audio gear. Like the sequencers I tested, Pro Tools LE provides MIDI and digital audio recording, playback, and editing. The SoloEXludes Steinberg's Cubasis, a "lite" version of Cubase VST that doesn't support effects plug-ins or software synthesizers. You'll probably want to invest in one of the sequencers reviewed here if you're going this route.

The Digi 001 and SoloEX are terrific products, packing features that not long ago cost a lot more. The SoloEX has the edge, though, because its hardware is more flexible, providing inputs for musical instruments such as electric guitars and basses.

To use these with the Digi 001, you must connect a separate preamplifier). The SoloEX's breakout box is also packed with knobs for adjusting levels, and it sports a large volume meter. By comparison, the Digi 001's box is much more spartan.

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vulnerable to latency, but even a G3 can suffer from it if you're running effects plug-ins at the same time – or are otherwise overtaxing the system. And just as system extensions can bicker, software synthesizers – generally running as plug-ins within sequencers – can also conflict with one another or with other plug-ins, requiring you to pull one or more plug-ins from the sequencer's plug-ins folder until your sequencer runs smoothly.

Old-time sound I loved every software synthesizer I tested, so picking winners wasn't easy. But Koblo's £149 Stella9000 2.5, which combines rich retro sounds with an easy-to-use interface, is hard to beat. Visit Koblo's site to download the free Vibra1000; it does only one note at a time (no chords), but gives you an idea of what a good synthesizer has to offer.

Dance to the music If dance music is your specialty, check out Propellerhead Software's £149 ReBirth RB-338 2.0.1. Distributed by Steinberg, ReBirth faithfully re-creates the sounds of Roland's revered but long-discontinued TB-303 Bass Line bass synthesizer and TR-808 Rhythm Composer drum machine (see the screenshot "Boot up and get down", on page 81). ReBirth is great for creating addictive dance beats that you can trigger from a sequencer or export to audio files for importing into a sampler or sequencer.

Sample me Another noteworthy program is BitHeadz' £249 Unity DS-1 2.0. Technically speaking, this is a software sampler – that is, rather than synthesizing sound, it plays back recorded samples. You can expand its palette by sampling your own sounds or buying sample libraries such as BitHeadz' £129 Black & Whites, which adds dozens of great piano and electric-piano samples. BitHeadz also makes a software synthesizer, the £129 Retro AS-1 2.0.1.

During my testing, BitHeadz released major updates to Unity DS-1 and Retro AS-1 – alas, both had problems. I had trouble getting them to run reliably, particularly with Digital Performer, and if the message headers on the BitHeadz email discussion list are any indication at all, then I'm not alone.

If you're interested in these very promising programs, then you might want to download the trial versions to see if they behave with your system.
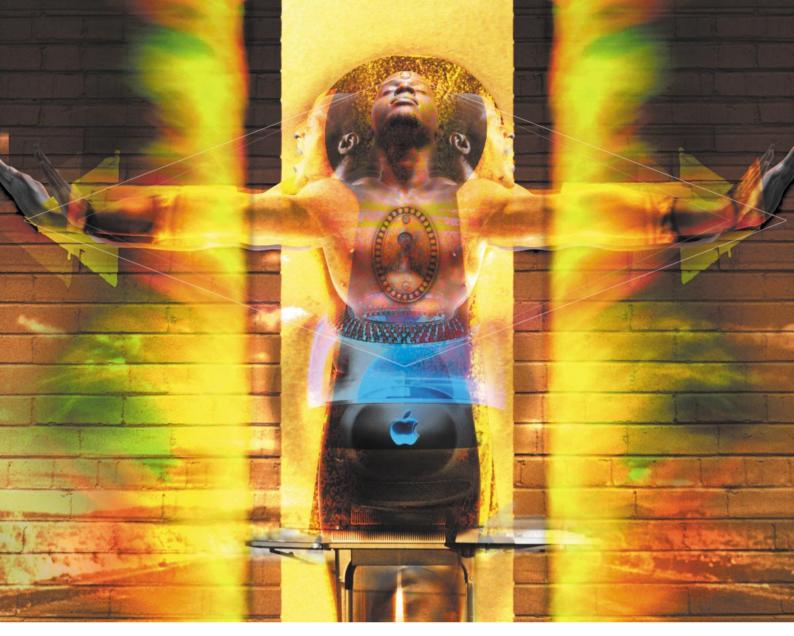
Macworld's buying advice

All of these products are good, pro-strength tools. My top picks are Mark of the Unicorn's Digital Performer, a powerful, easy-to-use sequencer; TC|Works' TC|Native Bundle and Waves' Native Power Pack for great mainstream effects; Cycling74's Pluggo for unique effects and great value; and the Stella9000 and ReBirth RB-338 software synthesizers from Koblo and Propellerhead, respectively.

So what's ahead for desktop audio? More capabilities, for starters. As processor speeds continue to climb, look for increasingly versatile software synthesizers and effects plug-ins. BitHeadz has already added support for the G4's Velocity Engine to boost to 128 the number of simultaneous voices in its Retro AS-1 and Unity DS-1.

Also, look to the Net to play a larger role in music production. Rocket Network (**www.rocketnetwork.com**) is setting up Net recording studios – virtual studios where musos can collaborate remotely. Rocket Network's servers keep track of a project's MIDI sequences and audio files; when you sign into a virtual studio, your copy of the project updates to the latest version. The Cubase VST and Logic Audio sequencers already support the service.

The best thing about the new generation of audio software is that it's for everybody. If you're a newcomer, these tools can open doors to creative expression, making it possible to realize the music you hear in your head. And professional musicians and audio engineers will love these economical alternatives to expensive studio gear and studio time. **MW**

Protect yourself online

Keep your personal information secure, with Macworld's in-depth guide.
By Elliot Zaret and Scholle Sawyer

Welcome to the wired world! In a matter of hours, you book tickets for your next trip to Brighton, buy a handful of travel guides from an online bookstore, and post an inquiry to the Internet newsgroup rec.travel.i-am-going-to.Sussex. Satisfied with all you've achieved so quickly and efficiently, you open your email and — surprise, surprise, you confront 45 messages offering "HOT XXXXX Steamy action in Brighton", as well as promises that you can make millions from the comfort of your own time-share. You also find five messages from people saying they read your Usenet message, found your home address on the Web, and have decided to visit.

As you're frantically deleting messages and wondering what you're going to do when strangers show up on your front porch, you begin mumbling to yourself: "That's it. I'm dropping off the grid and going to live in a cave. The Internet knows too much about me."

How did this happen? The wired world has its advantages – but easy as it is for you to find information online, it is just as easy for others to find out about you. This is a world where hackers want to steal your credit card number, where employers can easily look up your posts to online discussion groups or monitor your surfing at work, and where advertising "profilers" can track your movements and shopping habits. All sorts of information about you may be out on the Internet, ready for someone to connect the dots.

That's why we've assembled this guide to preserving your privacy online. If you're connected, you need protection. Since some invasions happen when you're not even at your computer, we'll also show you how to safeguard a Mac that's always connected to the Internet (see the sidebar "name TK"). With a little care and some helpful utilities, you can enjoy all the conveniences of the wired world and remain hidden from prying eyes.

Your IP is showing

Surfing the Web seems like a blissfully anonymous experience. No nosey salesperson eyes you when you buy toiletries from Drugstore.com, for instance, or winks when you buy a Harry Potter book from Amazon.com. But in many ways you're dramatically less anonymous online.

What they know about you As soon as you connect to the Internet, you set up a relationship in which you both give and receive. Every time you download a Web page, your browser sends the Web server information about what Web browser and operating system you're using, the URL of the page that referred you to the site (if you simply typed the URL, the Web site gets no information about the last site you visited), and the IP address (a unique identifying number your computer uses on the Internet) of your system.

This information is usually recorded in a log, a file that details every page a Web server sends out to readers – and tracks the IP addresses that retrieve the page. Sophisticated programs can process log files and piece together a profile of your visit: which pages you visited, how long you stayed on each one, and even what site you headed for when you left (if you clicked on a link on one of the Web site's pages).

Once someone has your IP address, he or she can also figure out generally where you're surfing from. For example, using the Lookup Domain feature in Stairways Software's (**www.stairways.com**) $35 shareware program, Anarchie 3.7, you can enter an IP address and find a person's domain.

What cookies tell them Some sites go further and use cookies. A cookie is a small piece of information the site wants to store on your hard drive – perhaps a unique number or user name identifying your computer. Your browser stores all the cookies together in a cookie file.

Sites can easily track what you do during one visit, but it gets more complicated when you go away and come back later. That's where cookies come in. Cookies allow sites to keep track of who you are even if you haven't visited for a while. This is how Amazon.com recognizes you and serves up book recommendations when you return to the site, without ever asking you to log in.

This is also how your myyahoo.com home page opens to your favourite news and stock quotes and how **www.telegraph.co.uk** remembers your user ID so you don't have to log in each time you read the *Daily Telegraph* online. If you've ever registered on a site, it may have associated your name, address, and email with all this other information.

Who's watching Most cookies simply make surfing more convenient. The exception is when sites allow a separate company, usually an advertising service, to place its cookie on your computer from within a site and then use that cookie to track you from site to site. With this knowledge, the advertising companies – known as profilers – can build a comprehensive profile of your surfing habits and use it to put ads targeting you on their partner sites.

The profilers argue that their activity is harmless and that they don't really know who you are. Besides, they say, they're basically doing you a service by tailoring ads so you see only items of interest. But take the example of the company DoubleClick, a very popular profiler many companies (including *Macworld*) have used. It became the focus of legal and media scrutiny for privacy invasion after it bought a direct-mail database called Abacus Direct last year.

The Abacus purchase gave DoubleClick the ability to take profiles a step further. The Abacus database contains nearly three billion transactions made at stores such as Bloomingdale's, as well as those customers' names and addresses. With that information, DoubleClick could connect the dots and link your surfing habits with your name, address, phone number – and your offline shopping habits as well. That was too invasive for the US Federal Trade Commission. This past February, it launched an inquiry into DoubleClick's practices. The company responded by promising not to link the two databases – for now.

Companies such as DoubleClick may draw heat when they track your movements online, but it's perfectly legal for your employer to do just that while you're on the job. See the sidebar "Your cubicle is not your castle" for more details about the limitations of your privacy at work.

Keep your surfing to yourself

If all this gives you the creeps, you can take a few protective measures. Most involve a trade-off between convenience and privacy.

Surf anonymously One way to keep people from monitoring your browsing is to hide it from them. For this, you can go to a nifty Web site called Anonymizer (**www.anonymizer.com**) and use its Anonymizer surfing service. Enter a Web address you want to visit – the service uses its servers to mask your identity as you continue to surf.

Surfing anonymously is the only way to stop transmission of your IP address when you visit a site.

You can try this service free, which means you'll experience a slight delay before linking to sites, or pay for a Premium account ($14.95 for three months or $49.95 for a year) for quicker performance. The site also plans to offer Premium members selective blocking of Java applets and JavaScripts.

Watch your cookies If anonymous surfing seems extreme, your next choice is simply to accept that sites know your IP address and to get wise about cookies. (If you dial in to your ISP, it may assign you a different IP address each time anyway.)

Most of the major reputable sites offer an "opt-out", or the ability to request that the site not track you with a cookie. You'll usually find this option on a site's privacy-policy page. The Center for Democracy and Technology (CDT) offers a Web site (**http://opt-out.cdt.org/online/**) to help you through the process at many of the top portals, profilers, and e-commerce sites, such as DoubleClick and Yahoo. But opting out takes a bit of time and effort – and may not actually work, since it's voluntary on the part of the companies.

Current versions of Microsoft Internet Explorer and Netscape Communicator have security features that keep sites from obtaining your email address or accessing your files without your permission, and every browser offers you the ability to turn off cookies.

Turning off cookies is a great idea in theory, but usually fails in practice. First off, some e-commerce sites require cookies to keep track of what's in your shopping cart. If you turn cookies off, most browsers will beep at you repeatedly – sometimes multiple times on a single Web page – warning you that the site is trying to send a cookie and asking you to accept or reject the file. Needless to say, this makes browsing all but impossible.

Microsoft's new Internet Explorer 5.0 (available on Macworld's cover-mounted CD) improves on this process significantly, allowing you to block cookies without all the beeping. If you want to know what cookies you've picked up in Internet Explorer, open Preferences and select Cookies from the commands on the left under Receiving Files. The list of cookies appears on the right. You can then select any you don't want and press Delete.

Use cookie-zapping software For Netscape users and people with older versions of Internet Explorer, a few programs can help manage cookies. Some offer other

features that make them worthwhile for Explorer 5.0 users, too.

Webroot's $29.95 Internet-cache-cleaning application, MacWasher, (**www.webroot.com/macwasher.htm**) is the most thorough of the bunch. This shareware utility cleans your cookie file at selected times or during start-up or shutdown. MacWasher allows you to select cookies and files you don't want deleted so you can still log in to your favourite trusted site.

If you don't want to stump-up the money for MacWasher, two freeware programs can help: first, there's 1.0 Technologies' useful application, No Cookie 2.0 (**www.onepointoh.com/products/NoCookie/**), and also MagicCookie Monster (**http://download.at/drjsoftware**), from Dr. Jon's Software. No Cookie allows you to see what's in your cookie file, delete its contents, and disable the file so it can't save new cookies but won't cause your browser to keep beeping at you. The only problem with No Cookie is that it offers basically an all-or-nothing approach. You may want some of your cookies that personalize certain pages.

While No Cookie uses a machete, MagicCookie Monster

Make your Mac hacker-proof

When you're constantly connected to the Internet through ADSL, a cable modem, or any other high-speed technology, the Internet is constantly connected to you. Millions of people can probe your Macintosh over an always-on connection – 24 hours a day, seven days a week. Do you trust all those people? Of course not.
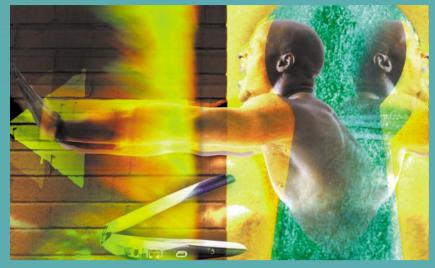
You use a Mac, so you're immune to many problems that plague the Windows world. In its default configuration, the current Mac OS is not vulnerable to spammers or other miscreants. For instance, no one can hijack your computer and turn it into a "zombie attacker", as happened with many individuals' PCs in the recent denial-of-service attacks against Yahoo and other big Web sites.

Now that you're using the Internet more ambitiously, though, it's important to make sure you aren't exposing your computer – or yourself – to unnecessary risks. If you're running an email or Web server, you'll want to protect your data as best you can from online thugs. One answer is firewall software.

Ports of call Internet programs communicate using ports. These aren't physical connectors on your computer, but numbered, software-based sockets on your Internet connection. Many port numbers are standardized. Port 25 sends mail; Web servers typically occupy port 80. Servers and some Internet programs listen on specific ports and respond to incoming connections: if you enable Personal Web Sharing, by default it listens for connections on port 80.

Firewalls can enable or block connections on specific ports and often for particular Internet addresses. Let's say you want to use Personal Web Sharing (or Mac OS 9's Internet-capable File Sharing) to access files on your home computer from work.

In addition to password-protecting your Mac, you could configure a firewall so it only permits access to port 80 (Web Sharing) or port 548 (File Sharing) from your work computer. This way, you could access your files from work, but the firewall would deny any attempt to connect to your Mac from other computers elsewhere. (However, this would also prevent you from connecting from the cybercafé down the street).

Options Your always-on Internet connection may use a simple hardware router – particularly if you have more than one static IP address. If so, that router may offer basic firewall capabilities, but you might have to configure it using a Telnet client, and it probably has little or no logging capability.

Open Door Networks offers the $60 package, DoorStop Personal Edition (**www.opendoor.com**), a simple firewall designed to protect the Macintosh on which you install it. DoorStop's interface is occasionally confusing, but configuration is straightforward, and DoorStop works with common services like Web Sharing, File Sharing, Timbuktu, Retrospect, and FileMaker. An enhanced $300 Server Edition offers more-flexible configuration options for Macs functioning as Internet servers.

Intego's $75 NetBarrier (**www.intego.com**) also protects the computer on which you install it but offers an elaborate interface with traffic-monitoring gauges and configuration options. Unlike DoorStop, NetBarrier can filter incoming and outgoing traffic, so you can prevent credit card or Social Security numbers from leaving your computer. NetBarrier protects against some denial-of-service attacks and detects port scans, which usually mean a miscreant is looking for an exploitable service. This program also overcomes a weakness in Open Transport by scrambling TCP sequences so it's tough to hijack an Internet session. NetBarrier is overkill for most people, but it offers unique features. If you're connecting multiple computers to the Internet, software routers such as Vicomsoft's SoftRouter (£62 plus £22 p&p, Vicomsoft, 01202 293 233) and Sustainable Softworks' $90 IPNetRouter (**www.sustworks.com**) add firewall capabilities for an entire network. However, both products require more technical know-how.

Safety strategies There are two basic approaches to a firewall: you can selectively enable connections or selectively deny connections. The former approach is more conservative – the firewall blocks all connections except the types you specifically permit. The latter approach is less secure, but it's also less hassle. You don't have to remember to use Passive FTP (in the Internet control panel's Advanced settings) or reconfigure your firewall if you install something, say, America Online Instant Messenger.

Breathe Easier A firewall can't protect you from every Internet threat – you can still receive Trojan horse programs or virus-infected documents via email, and Web sites still try to track your every move – but it can help prevent a number of common abuses of your Mac.
Geoff Duncan

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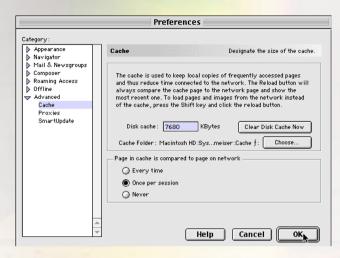
wields a scalpel. With this utility, you can edit your cookie file, selectively deleting any cookie you don't want. Of course, the flaw here is that you can't disable the cookie file, so those nasty cookies will return soon enough.

One solution is to use the two in tandem. Use MagicCookie Monster to delete cookies you don't want; then run No Cookie to disable the cookie file and keep new cookies out. This allows you to keep the automatic registrations at select sites of your choosing.

Zap everything Another solution for aggressive advertisers is to use Override Software's $25 Lightspeed Surfer (**www.overridesoft.com/lightspeed/**), which blocks not only cookies but also advertisements. With this shareware utility running, you see a box with a plain text link in place

▶ page 90

Preferences

Category:

▷ Appearance
▷ Navigator
▷ Mail & Newsgroups
▷ Composer
▷ Roaming Access
▷ Offline
▽ Advanced
   Cache
   Proxies
   SmartUpdate

Cache   Designate the size of the cache.

The cache is used to keep local copies of frequently accessed pages and thus reduce time connected to the network. The Reload button will always compare the cache page to the network page and show the most recent one. To load pages and images from the network instead of the cache, press the Shift key and click the reload button.

Disk cache: [7680] KBytes   [Clear Disk Cache Now]

Cache Folder : Macintosh HD :Sys...meiser :Cache ƒ : [Choose...]

Page in cache is compared to page on network

○ Every time
● Once per session
○ Never

[Help] [Cancel] [OK]

A clear cache
Your browser's Cache file keeps a record of every Web page you've visited. To erase this trail in Netscape Navigator, go to Preferences and click on Clear Disk Cache Now.

of banner ads – handy if the World Wide Web's irritating commercial bent overwhelms you.

Lightspeed Surfer can also place a useful block on Java applets and JavaScripts, as well as plug-ins – which can bring their own host of security issues, although most of these tend to occur mostly on more-widely used Windows computers. Of course, this kind of heavy-duty protection has its price – you lose some of the nifty functions those Java programs provide, such as streaming stock quotes and real-time chat. Also, your browser can already turn Java and JavaScript on or off on-the-fly, so this feature may be overkill.

Your own worst enemy

Unfortunately, you are your own biggest security risk. Any data you put in an online form, especially personal information, is fair game for advertisers or hackers.

Most information – whether it be email, a photo, or items you type into a form – travels across the Internet in packets. These bounce from server to server until they reach the right computer. Hackers have programs that can sit on a server and read all the packets that pass by, so a hacker can intercept information at will.

Protect your passkeys It's easy to give away information without even realizing it. The three passkeys for your credit card and bank accounts are most likely your mother's maiden name, your date of birth, and your National Insurance number. You'd never tell anyone all this, right? Think again.

If you're a fan of genealogy, for example, you may have posted your mother's maiden name on your home page or on a genealogy site such as FamilyTree Maker.com. You also may have given your date of birth in these places or when you registered for any number of sites.

Your National Insurance number is probably the safest (and most crucial) of the lot, so protect it as best you can – do not give it to companies unless you must: for example, when you deal with a creditor. If you suspect someone has intercepted your personal information and stolen your identity, move fast (see the table "Online liberty and civil rights organizations").

Use secure sites In some cases, however, you may feel that giving away some information in exchange for certain services is well worth it. In that case, follow some simple precautions. Require a secure site whenever you give any personal information. You have two ways to check: the key or padlock in the bottom left corner of your browser window should be locked; and the URL should begin with **https://** rather than **http://** (the "s" is for secure) if the connection is secure.

Don't let others join the dots

We've talked about several ways people can obtain information about you on the Web, but one of the biggest dangers is how easily they can put all this information together. Take, for example, the following popular Internet legend.

As the story goes, BigHank53 sends a random email to a site, calling its creators stupid. These levelheaded chaps search the Web, probably using a search engine such as AltaVista, for his Hotmail address. (For tips on searching the Web, see "Search Me", page 82, June 2000.) He's put this email address on his home page, along with his résumé, information about his family, and his activities with a church youth group. The site's creators then do a search of Usenet discussion groups and discover BigHank53's email address somewhere else – on postings to adult newsgroups.

After searching for the phone number of his church and employer, they have all the information they need to blackmail poor BigHank53. Their price? He must put a blinking banner that says "I am stoopit" on his home page. Is this a true story? Probably not. The scary thing is... it could be.

Discussion groups are not private Take a lesson from BigHank53. If you post to discussion groups, know that your posting gets archived and that people can search for what you've said by typing your name on a site called Deja.com (formerly Deja News).

This site archives every posting to every Internet newsgroup in searchable form. The premise of Deja.com is that you can see people's comments about a product you may be considering buying and use the archive as a grassroots Consumer Reports.

People can use this service for different purposes, however. Anyone from crazy site creators to potential and current employers, for example, can search for your name or email address.

If you're making nasty remarks about your co-workers or have a penchant for violent or sexual materials, they may find that enough grounds to fire you or not to hire you. This holds true if you keep an online diary or Web log – if it's on the Web, it's not private.

Watch where you post your email address There's another reason for wariness when you post to discussion groups. Spammers use programs that mine these newsgroups and collect email addresses, and then they flood you with spam about the latest get-rich-quick scheme or porn site.

If you want to avoid spam, or don't want your Usenet postings forever on display with your identifying email address, get an anonymous Web-based email address from a provider such as Yahoo Mail or Hotmail. These are also great to use for all online registrations – the source of some spam.

To really throw the dogs off your scent, sign up for a couple of different email addresses and rotate them. This keeps anyone from developing a profile, even on your anonymous email. If you don't like the idea of logging into all those accounts, use a secure (and free) personal information portal like Yodlee (**www.yodlee.com**) to check all your email addresses at once.

There's another option if you want fellow posters to be able to write you but want to outwit spammers' programs – you can also insert a word or two into your email address and include instructions for people to delete them before writing – for example, reader_nospam@macworld.co.uk. Never put these camouflage email addresses on a personal home page with your name on it.

The last word

The precautions you choose to take really depend on how much privacy you require. It also depends on what it is, exactly, that you do online. In all likelihood, you could surf and post freely your whole life without dire consequences – but why take the chance? A few simple measures can put you in control of what people know about you and what they don't.   **MW**

Macworld picks 15 software titles that help you get the most from your handheld

Palm programs to pack

A handheld is only as useful as the software it runs – otherwise, it's just an expensive paperweight. Since its introduction four years ago, the Palm OS has amassed a rich following of developers, from amateur programmers to professional software publishers, who have created tens of thousands of programs for use on Palm and Handspring handheld organizers.

A peek at Web sites like PalmGear (**www.palmgear.com**) or the Tucows PDA site (**http://pda.tucows.com/palm/**) reveals tons of freeware and shareware, ranging from multifunction clocks to strategy games. Instead of trying to pick the best programs – a daunting task that would surely mean missing out on a lot of worthy software – we asked *Macworld's* Palm-using editors to choose some of their favourite apps for everything from productivity and organization to travel and games.

Keep connected

■ AvantGo
AvantGo, **http://avantgo.com**; free
Want to carry Web pages with you on your Palm? There's no easier way than the free AvantGo, which connects to the Web sites you've chosen to read and updates your Palm with their contents every time you HotSync. Even graphics and hyperlinks transfer over, making AvantGo a great way to read your favourite publications when you're on the go.

■ MultiMail Pro
Actual Software, **www.actualsoft.com**; $40
If you've got a modem on your Palm, you can check multiple POP or IMAP email accounts from the road with MultiMail Pro. It offers message filtering, multiple mailboxes, and other features we've come to expect from Mac email programs. The MultiMail Conduit ($30; $20 with purchase of MultiMail Pro) can HotSync either MultiMail or the built-in Palm mail application with your Outlook Express, Claris Emailer, or Eudora mailboxes.

Get organized

■ Actioneer 2.0 for Palm Handhelds
Actioneer, **www.actioneer.com**; $20
Billed as "the easiest way to get information into your Palm organizer," Actioneer provides a notepad – like way to enter information on your handheld and then lets you include the note in any of the four native Palm utilities.

■ BrainForest Mobile Edition 2.1
Aportis Technologies, **www.aportis.com**; $30
Those of us who relish the organizing capacities of an outline will certainly appreciate BrainForest, which gives you the ability to group action items (notes or to-dos) under common headings of your own choosing and then export those items to the Palm's native to-do list or notepad.

■ JFile Pro 1.0d, Land-J Technologies
www.land-j.com; $25
FileMaker Pro won't run on your Palm, but this impressive database program will. Add FMSync Software's FMSync for JFile Pro ($38, **www.fmsync.com**), and you can even HotSync JFile to your FileMaker databases.

■ Launch 'Em 2, Synergy Solutions
www.synsolutions.com; $10
Want to give your Palm a more Mac-like feel? This cheap utility is the answer. It replaces your Applications program with a multitabbed, drag-&-drop interface – complete with Trash can!

Tetris who?
SameGame will have you dreaming about blocks – over and over again.

Quick change
Converter lets you switch between measurements with a tap of your stylus.

Moondance
Planetarium promises the moon and the stars – and it delivers.

Blast off!
Make your Palm's applications menu feel more like your Mac's with Launch 'Em 2.

■ **TealLock 2.10E**
TealPoint Software, **www.tealpoint.com**; $12
Don't leave your personal information unprotected. TealLock is a clever security program for your PDA that picks up where Palm OS's Security program leaves off. It offers not only password protection but also password masking, and it allows you to add conditions (timed, by keystroke, power off) to Show/Hide Private Records and Turn Off & Lock.

■ **Workout Tracker 2.19**
Stand Alone, **www.standalone.com/applications/palm/**; $20
Designed to co-opt your PDA as a mobile workout log, this application encourages weight-lifting aficionados and aerobics enthusiasts to log activity specifics and then analyzes the saved information.

Travel smart

■ **Currency 3.0c**
Henrique M. Martins,
http://members.xoom.com/HM_Martins/currex.htm; free
Need to know the exchange rate for the Albanian lek, Costa Rican colon, Laotian kip, Surinamese guilder, or Zambian kwacha? This foreign-currency converter and calculator includes 165 currencies for everywhere from Afghanistan to Zimbabwe, and you can download updated exchange rates daily. You can even define up to ten additional currencies – perfect for when you create your island kingdom and start printing your own money.

■ **Converter 1.1**
Matt N. Marsh, **www.matt.oaktree.co.uk/computing/**; free
If you have trouble remembering just how many pounds are in a stone or fluid ounces are in a litre, or how to convert 30 degrees Celsius to Fahrenheit, you need Converter. This program converts most standard units of length, volume, area, weight, speed, and temperature. And even better, the program does all the calculations for you rather than just giving you the conversion factors.

Have fun

■ **EightBall 1.2**
Jaler Group, **www.wangner.net/babel.html**; free
This one's just the trick for anyone who has a hard time making decisions or needs a little advice. Wondering whether you'll meet that important

deadline? Ask the all-knowing EightBall, and then shake, roll, or spin the ball. Tap it to see your answer: "Outlook not good." Yes … it is very wise.

■ **Planetarium 1.9**
Andreas Hofer, **www.aho.ch/pilotplanets**; $19
What star is that? When will the Moon rise? Where is Jupiter right now? Planetarium knows these answers – and a whole lot more. The positions of the Sun, Moon, planets, and 1,600 of the brightest stars, nebulae, and other celestial bodies are loaded into the 99K Planetarium. Scan the heavens in compass view or sky view. It's a little tricky but well worth the effort.

■ **Pipeline Perils**
Neil Pollard, **www.antigone.demon.co.uk/pilot**; $10
In the classic Mac game Pipe Dream, you had to connect sections of pipe in various shapes quickly while keeping ahead of the advancing flow of water. This homage is an action puzzle game worth playing.

■ **SameGame 1.0, DejaVu Software**
www.dejavusoftware.com/same/index.html; $10
Like Tetris in reverse, this game starts with a screenful of patterned squares, which you must eliminate. When you tap a square, every adjoining square of the same pattern also disappears, and the remaining blocks slide down to fill the empty space. The more complicated the pattern of blocks you remove, the higher your score – and the more addictive it gets.

■ **TealInfo 2.22D**
TealPoint Software, **www.tealpoint.com**; $17
TealInfo is a handy application that allows you to view databases of everything from mixed-drink recipes to guitar chords to metric conversion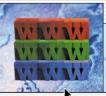s. Posted on TealPoint's Web site, these handy little files can find out what names mean, how much of a tip to leave, how to put on a tie – you can even set up your very own Pokémon card checklist. **MW**

Frith Breitzer, Suzanne Courteau, Kelly Lunsford, Lisa Schmeiser and Jason Snell contributed to this article.

Con-template the Web

Dreamweaver's templates take the tedium out of Web-site maintenance. **By Mike Wooldridge**

For a Web developer, nothing beats seeing months of hard work pay off with a successful-site launch. But once a Web site is up and running, it's often the routine maintenance tasks and site updates that take up the most time. Such day-to-day work can be short on creativity and long on repetition.

Good Web-editing software can take the drudgery out of maintaining large sites, by helping streamline the process of creating and updating elements that appear on multiple pages. With Macromedia Dreamweaver's templates and libraries, you make changes to just one file and then let Dreamweaver make those changes on multiple pages.

A routine task that might take half an hour, if dozens of pages have to be coded by hand, can take just a few minutes. And unlike a text-based Web editor – such as Bare Bones' BBEdit – which offers search-&-replace capabilities across multiple files, Dreamweaver's visual interface can make complex changes without you ever having to touch an HTML tag.
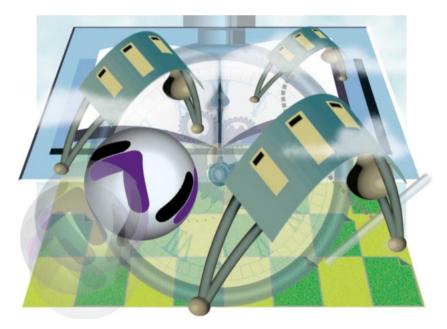
To help you exploit their power, I'll discuss using templates and libraries and how each works. (See "Automating with templates" and "Automating with Library Items" for step-by-step instructions.)

Stepping-up to templates

Dreamweaver's templates feature can be a tremendous time-saver when building and updating frequently used layouts. It can create multiple-Web pages based on a generic-page layout. To modify pages, all you have to do is make changes to a template and have Dreamweaver propagate those changes to every page that's based on the template.

A site can have more than one template. In fact, a different one for each style of page, such as news-story or employee-bio pages, can be built.

Let's say you want to add a Jobs button to a navigation menu that's on every page of your company's site. Just make any changes to the template, and then have Dreamweaver hunt through the entire site, adding the new button to each page that's based on that template.

Library items are great time-savers when there's content that appears many times on a site, but not in the same place on every page. That's because they work on the element level – rather than the page level. Let's say a site features ad banners from four different advertisers. You can save each banner as a library item, and then add it quickly to other pages by inserting it from Dreamweaver's library palette – instead of re-creating it every time. If later you need to update the banner graphics – for instance, swap in new graphics or change the hyperlink destinations – simply change the original library items. Dreamweaver will update the different instances of the banners on the site automatically.

The efficiency gains that templates and libraries can deliver make them well worth your while, even when maintaining a small site. For ideas on expanding the capabilities of templates and libraries, go to **www.macworld.co.uk/create**. *page 100* ▶

Mike Wooldridge is a Web designer and the author of *Teach Yourself Dreamweaver 3* **(IDG Books Worldwide, 2000).**

GEORGINA WATSON

Automating with templates

reamweaver's templates feature lets your computer do the grunt work when it comes to updating elements that appear many times on a Web site. There are only a few basics you need to get started. Templates have two types of regions – editable and locked.

Locked regions are for content that's the same on every page, such as disclaimers. Editable regions are for page-specific elements, such as page titles. By default, all template elements start out locked. You have to choose the regions that will be editable on individual pages.

1 Create a template just like you would any other Web page in Dreamweaver. A template can be built from scratch or created from an existing Web page. To save the new page as a template, choose Save As Template from the File menu.

To define a region of a template as editable, click-&-drag to select it, and then choose Modify-Templates-Mark Selection As Editable. Only editable regions – which Dreamweaver highlights in blue – can be changed in Web pages that are based on a template.

2 To create a Web page based on a template, choose File-New From Template. Then make the changes you want – such as adding a graphic or text – to the editable regions. It's easy to see which regions are editable, since Dreamweaver highlights the ones that aren't – the locked regions – in yellow. On this employee page, only the personal details and image are editable.

3 If you want to change locked regions in a Web page, you must open the original template file – located in the site's Templates folder – and make the changes. Here, I added a line for email addresses, revised the company slogan, and jazzed-up the background.

4 Finally, save the edited template. When you do, Dreamweaver will prompt you with an alert box asking if you want to update pages based on the template. Click on Yes, and you're done. The window shown here displays the results of my update. Dreamweaver updated ten of the site's files, I updated only one – the template.
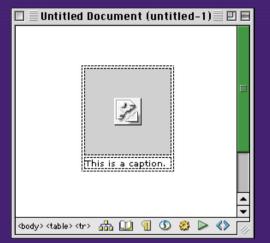
Automating with library items

reamweaver uses a library to store page elements, such as tables, that are used often. Instances of a library item can't be edited on a page-by-page basis. Instead, you must open the original library item from the site's Library palette.

When you tell Dreamweaver to apply the changes site-wide, it updates every page that contains an instance of that library item.
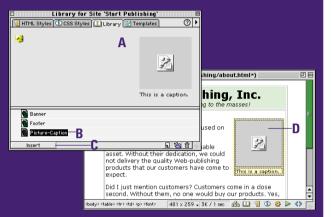
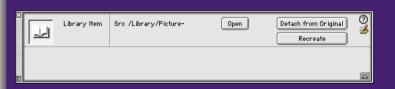You may want the convenience of storing a Web-page element as a library

item, but you'll also need the flexibility of customizing its instances individually after it's inserted it into a page. Here's how to do both. I'll use the example of creating a generic, two-celled table that's designed to hold an image and a caption.

1 First, create a two-celled table in the Document window. To save it in the site's library, select it, then choose Modify–Library–Add Object To Library. This library item can be used each time an image and caption is added to a site.

2 The Library palette displays all the library items available for a site (A). To add this library item to a page, select it in the Library palette (B) and click on Insert (C). The table is inserted into the document (D). At this point, Dreamweaver can change the table in the document by changing the item in the library.

3 When you initially add the two-celled table to a page from the library, you can't customize it, because instances of library items are locked. To edit it, dissociate it from the library by clicking on the Detach From Original button in Dreamweaver's Property Inspector. If the Property Inspector is closed, open it by selecting Properties from the Windows menu.

4 Once the table is detached from the library, you can customize the table with an image and caption. However, you can no longer change that instance of the table by changing the original library item.

Style counsel

Import Microsoft Word style sheets into QuarkXPress. **By David Blatner**

Long before Microsoft Word dominated the word-processing field, a program called MacWrite was bundled with every Mac sold. The original version of MacWrite was based on word processing technology licensed from Quark – surprising, given that importing text into QuarkXPress is far from trouble free. If Quark was processing words back in the 1980s, why doesn't XPress do a better job of importing word-processing files today?

Fortunately, you can improve QuarkXPress's performance, and save yourself the time and trouble of reapplying formatting, by following a few rules and procedures. Note that this article addresses the import of Microsoft Word documents, because they're the least altered by XPress. However, most word processors can save files in Word format, so you can benefit from this information even when not using Word.

Path of least resistance

The Cut-&-Paste commands may seem like an easy way out, but do yourself a favour, and don't try to cut text from Word and paste it into XPress. The text usually comes through, but it loses all formatting. When you need to maintain style sheets – bold and italic text, font size, or other formatting, the best option is to use the Get Text command – located in the File menu.

The Get Text dialogue box has two checkbox options – Convert Quotes and Include Style Sheets. The first simply converts dumb quotes to smart quotes and double hyphens to em dashes.

The second option tells XPress whether to read the file's style sheets (see "Importing Word's styles"). When Include Style Sheets isn't selected, the imported text is tagged with the current style sheet and unwanted local formatting to match its appearance in Word. Even worse, applying a new style sheet has little or no effect on this text. That's why I always turn on Include Style Sheets when importing Word files.

Because XPress and Word have different feature sets, importing formatted text files isn't always seamless. For instance, XPress converts Word's tables to tab-delimited text.

XPress also ignores Word's page geometry – including columns, placed text blocks, and margins – and paragraph auto-numbering. Word's footnotes show up at the end of an imported text file. Also, Word's drop caps and other fancy formatting – such as borders and shading – rarely import properly.

There're tricks around two of these shortcomings. To preserve a table, save it as a PDF file and then import it into an XPress picture box. Of course, the table can't be edited later, not even to change the typeface. To keep auto-numbering, save the Word file as a Word 5.0, 5.1, or 6.0 document before importing it.

A character study

Despite Quark's claims to the contrary, you may be in for trouble when importing Word for Windows documents into QuarkXPress for Macintosh. I've seen all kinds of weirdness, most frequently when I import "special" characters, such as smart quotes and em dashes – which often translate into unexpected and undesired glyphs.

The best solution I've found is to open the Windows file in a Mac version of Word and save the document under a new name before importing it into XPress – it's vital you change the name, otherwise Word won't change the format.

No matter what import problems you encounter, make sure to download the latest import filters from **www.quark.com/files**.

The last word

Even if XPress does someday include a word processor (see News), we will still have to deal with the millions of word-processing files out there. It can be a pain, but with careful planning and strict use of style sheets, you won't be at a loss for Word. **MW**

David Blatner is the author of
The QuarkXPress 4 Book **(Peachpit Press, 1998).**

GORDON STUDER

Importing Word's styles

The most important step you can take when importing a Microsoft Word document into a QuarkXPress file, is to make sure the style-sheet names are the same in both documents. The formatting can be wildly different, but as long as the style-sheet names are the same, XPress can swap Word's definitions with its own.

TIP: To make sure you've got the same style-sheet names in both programs, import some Word text into an XPress document with different style-sheet names. XPress automatically adds the Word style-sheet names to the Style Sheets list, where you can redefine them at will.

Translating your styles cleanly from Word to XPress is easy.

1 Except for the occasional use of italics or other means of emphasis, use Word's style sheets, not local formatting (see "Get rid of the plus sign").

2 When you import the document into XPress using Get Text, make sure you turn on Include Style Sheets.

3 If the styles are different in the two programs, XPress asks which version it should use. Choose Use Existing, which strips out the Word definitions.

4 Word sometimes saves extraneous style sheets – such as the character style called Default Paragraph Font – which you may now want to delete.

Get rid of the plus sign

Here's a common problem: before you get a Word document, someone changes the text's font and size. Because the formatting was applied locally rather than by changing style sheets, all the local formatting remains when you import the document into XPress. When trying to apply a new style sheet, the text doesn't take on the new style.
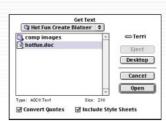
One way to jump this hurdle is to go to XPress's Style Sheets palette and apply No Style to the text first then apply the style sheet. However, this wipes out all local formatting, including any bold or italic words you might need to keep. Here's a technique to strip out the unwanted local formatting while retaining the formatting you want.

1 Click in the text, and you'll see the plus sign in the Style Sheets palette, indicating that there's local formatting.

2 Edit the XPress style-sheet definition so it matches the imported Word text characteristics.

3 Click on Save in the Edit Style Sheets dialogue box. Notice that the plus sign is gone from the Style Sheets palette.

4 Now edit the style-sheet definition again, resetting it to the formatting you desire.

Voilà – the unwanted local formatting disappears, leaving the stuff you want behind.

Action stations

Folder actions can save time and stave-off boredom. By Joseph Schorr

How many times a day do you open and close folders, drag files in and out of folder windows, or move and resize the windows on your desktop? Consider this: every time you perform one of those mundane tasks, you could be tapping into the timesaving power of folder actions – a feature introduced with Mac OS 8.5.

Folder actions can attach specific AppleScripts to folders, training them to perform tasks whenever they're opened, closed, moved, and so on. Imagine creating folders smart enough to open just where you want them, or to clean up after themselves – closing their own sub-folders.

While hard-core AppleScript pros can have a field day with this stuff, you don't need to understand a programming language to pull this stunt off.

Well hidden

The first trick is to find the Mac's folder-action features – there isn't a single menu command in the Finder, and there's nothing in Apple's Script Editor that indicates a script can be attached to a folder. Even the ten sample-scripts Apple provides to get you started are tucked away inside a folder buried two levels deep within the System Folder.

We'll show you a couple of additional tricks involved in bringing folder actions to life, along with a sampling of the cool things a Mac can do. For most of the commands we describe, Script Editor's built-in Record feature will create scripts by simply recording your actions in the Finder.

To create a folder action, control-click on any folder – or disk icon – to which you want to attach an action. At the very bottom of the contextual menu that pops up, there's a command called Attach A Folder Action. Choose this command, then select an AppleScript. Once a script is selected, a contextual pop-up menu provides commands for editing and removing folder actions (see "Finding Folder Actions"). A tiny AppleScript badge appears on the lower left corner of a folder's icon once a script is attached to it.

Not every AppleScript can be used as a folder action, though. Folder actions work only with scripts saved out of Script Editor as compiled scripts, not with those saved as applications.

If a script has been saved as an application, open it in Script Editor and resave it in the compiled-script format by selecting that option from the Kind pop-up menu in the Save As dialogue box.

And another thing...

Furthermore, saving an AppleScript as a compiled script with the Attach A Folder Action command won't work if the script doesn't start and end with certain action-specific commands (see "Magic words"). The required scripting isn't terribly complicated, but these little snippets of code are essential for folder actions to work. The examples that follow demonstrate the words needed.

Finally, folder actions get triggered only

ANDY BAKER

Finding folder actions
Control-clicking on a folder reveals all the commands needed to attach, remove, and edit folder-action scripts. Notice the folder icon's small AppleScript badge, which indicates that the folder has a script attached to it.

when the folders to which they're attached are open. In other words, you can't trigger a folder action by dropping a file into a closed folder. If you don't like it when other users mess with your carefully organized on-screen workspace, here's a cool trick: create a folder window that always springs back into place – at the exact size and position you prefer – whenever anyone attempts to move it.

Size and position

First, record an AppleScript that specifies the position and size of the window you want to control. Open that window; launch Script Editor; click on the Record button; and while recording, position and size the window. When finished, click on the Stop button. The script that results will look something like this:

```
tell application "Finder"
    activate
    set position of container window of folder ¬
            "Your Folder" of startup disk to
{405, 105}
    set size of container window of folder ¬
            "Your Folder" of startup disk to
{409, 279}
    end tell
```

Now, to turn it into a folder action, add the following lines to the beginning and end of the script. It is important to get this bit right. It will look like this:

```
on moving folder window for this_folder from
original_bounds
    tell application "Finder"
        activate
        set position of container window of
folder ¬
                    "Your Folder" of startup
disk to {405, 105}
        set size of container window of
folder ¬
                    "Your Folder" of startup
disk to {409, 279}
        end tell
    end moving folder window for
```

The first and last lines of code perform the enclosed tasks any time someone tries to move or resize the window. Save this code as

a compiled script, and then attach it to a folder using the steps outlined previously. From now on, that folder's window will instantly jump back into the position you've set whenever anyone tries to move it.

Similarly, smart folders – that always pop open exactly as you specify – can be created.

Suppose you want a project folder that always opens at the left side of your screen, with items sorted by date. Again, record a script in Script Editor: click on Record, open the window, put it where you want it, and set the list view according to your preferences. The script will record all these actions. When you're finished, click on Stop.

To transform this script into a folder action, add two lines to the recorded script, one at the top and one at the bottom:

```
on opening folder this_folder
    tell application "Finder"
        activate
        set size of container window ¬
                of folder "Projects" of
startup disk to {293, 275}
        set position of container window ¬
                of folder "Projects" of
startup disk to {12, 478}
        end tell
    end opening folder
```

The two opening folder commands tell the Mac to run this script whenever a user opens the folder to which it's attached. This guarantees that the folder will always open in the same spot, with the same settings.

The next level

If you want to dig deeper into folder actions, check out the sample scripts that Apple keeps nestled away in the Scripts folder inside the System Folder. There's no special reason to store these scripts in the System Folder, by the way. They can be placed in any convenient location on your system.

Though you may not find the samples that compelling, they provide a good model for developing more-sophisticated folder actions. **MW**

Joseph Schorr has been a *Macworld* writer since 1991.

Magic words

Folder-action scripts must start and end with commands specifying the particular action that triggers them. Here are the five different commands for making folder-action-savvy scripts. As is always the case with scripting, exact wording and syntax counts when including these commands in your scripts.

CREATE FOLDER ACTIONS TRIGGERED BY:	START YOUR SCRIPT WITH THIS COMMAND:	END YOUR SCRIPT WITH THIS COMMAND:
Opening a folder	**on** opening folder this_folder	**end** opening_folder
Closing a folder	**on** closing folder for this_folder	**end** closing folder window for
Adding items to a folder	**on** adding folder items to this_folder	**end** removing folder items to
Removing items from a folder	**on** removing folder items for this_folder	**end** removing folder items from
Moving or resizing an open folder window	**on** moving folder window for this_folder from original_bounds	**end** moving folder window for

• Secure passwords • Hide windows • MP3 playlists

Q&A/tips

Handy Mac tips and readers' questions answered. **By Lon Poole**

Tighten security

TIP No password is unbreakable, but alphanumeric passwords are more secure than the passwords many people use, which tend to be composed of letters only. Jim Butler compiled three methods for creating easy-to-remember alphanumeric passwords.

With what he calls the look-alike method, numbers are used in place of the letters they resemble –the letter o is replaced with the number 0, i with 1, z with 2, s with 5, G with 6, and g with 9. For example, worlds becomes w0r1d5.

Or why not be the Artist Formerly Known as Prince, creating your passwords from phrases by substituting individual letters and numbers for words and syllables they sound like. For instance, "I see you ate before two" becomes icu8b42.

The 0-to-J method is more complicated, and harder to remember at first. You substitute the numbers 0 to 9 for the letters a to j. Simply pick a word and replace any occurrence of a with 1, b with 2, c with 3, and so forth. For example, benzene becomes 25nz5n5.

Another method is to create passwords that are acronyms for mnemonic phrases – for example, B282fbsl, which means "Badwater is 282 feet below sea level."

Get around remote-access limits

Q Can I configure the Multiple User control panel so that a Normal user can open the Remote Access control panel?
Alex Flax

A The network configuration is usually the same for all a computer's users, so Mac OS 9 allows only the Owner to make changes in the Remote Access control panel. This is also true of the Modem, AppleTalk, TCP/IP, and File Sharing control panels. But there are ways a Normal user can have the same control over the Remote Access control panel as the Owner. How you go about it depends on what type of control users need.

If all a user needs to do is connect and disconnect manually to the Internet, give access to the Control Strip so the user can open the Remote Access module. The Owner can make the Control Strip available to Limited and Panels users as well.

Another option is to make connecting and disconnecting automatic, no matter who's using the computer. To do so, configure the Remote Access control panel to connect whenever a user attempts to dial in – for instance, to retrieve email messages or browse the Internet – and then disconnect after a designated period of inactivity.

What if users need to do more than connect and disconnect? Any user can change Remote Access or other network configurations via the Location Manager, but it's not convenient – it requires restarting. Here's how to grant access and avoid trouble. The Owner must create a location in the Location Manager control panel for each network configuration a user may need. Additionally, the Owner must use the Location Manager's Preferences command – in the Edit menu – to set the Startup Switching option to Always. Thereafter, the Location Manager will ask the user to select one of the pre-configured locations during start-up. Since this opportunity occurs only during the start-up process – before log-on – users must restart the computer to change the network configuration, the Logout command insufficient.

Warning – make sure to tell users they must restart, in order to change network settings. The OS won't let anyone but the Owner change settings via Location Manager without restarting. Even worse, attempting to change settings could cause Location Manager to malfunction. For instructions on how to guard against such mishaps, read article 60657 in the Apple Tech Info Library (**http://til.info.apple.com/techinfo.nsf/artnum/n60657**).

Window-hiding shortcuts

Q Do you know of a one-step method for getting a clean view of my desktop when I have several applications open? This normally requires two steps if I'm already working in an application. First, I switch to the Finder from the active application. Second, I choose the Hide All option from the application menu.
Jeff O'Shea

Power-key problems
Don't bother plugging your USB keyboard into a self-powered USB hub if you expect the Power key on the keyboard to do anything more than take up space. Most hubs won't come to life until they get a tiny nudge from the computer, so the signal from the keyboard's Power key won't pass through to the computer until the computer is running. If you insist on connecting your keyboard in this fashion, you can use the Power button on the CPU to start up your Mac.

• Download to desktops • InDesign workaround • Move paragraphs

A 'The first shortcut is to develop a new habit – hide applications whenever you leave them. That way, when you switch to the Finder, all applications are already hidden. For this tactic to pan out, you must diligently press the option key every time you switch applications. The option key works with multiple switching methods – choosing an application from the Applications menu, clicking in another application's window, or clicking in the Application Switcher palette of Mac OS 8.5 and later.

Don't want to be that obsessive? As an alternative, use the AppleScript applet shown below in "Switch and hide" (below).

Switch and hide
This simple AppleScript applet switches to the Finder, hides all other applications, and then collapses all Finder windows – giving you an unobstructed view of the desktop. Enter these commands in a Script Editor window. When you save them, set the Format option to Classic Applet and turn on the Never Show Startup Screen option. To make switching and hiding a one-step process, put the saved applet in the Apple menu.

Destination desktop folder

TIP I like to set the Desktop Folder as the destination for Web downloads and email attachments. This is no problem in programs that use the old-fashioned Open dialogue box, where you simply click the Desktop button and then click any greyed-out item. But, this trick doesn't work in programs that use a Navigation Services dialogue box with Mac OS 8.5 and later.

You can select the Desktop folder in this dialogue box by pressing the option key while choosing Desktop from the Shortcuts menu. Or, you can choose Desktop from the Shortcuts menu

– or press ⌘-D. That brings up a list of desktop items with one of the items selected. Next, shift-click the selected item to deselect it, and then click the Select button.
Dylan Drazen

Moving paragraphs

TIP In AppleWorks, you can use keystrokes to move paragraphs in a document. Just put the insertion point in the paragraph you want to move, or select the text in multiple paragraphs. Then press control-up arrow or control-down arrow to move the paragraph(s) up or down one paragraph.

You can also increase or decrease a paragraph's left indent half an inch by pressing control-right arrow or control-left arrow.
Ben Rosenthal

Orderly MP3 playlists

TIP After ripping a CD to MP3 files, you can add these files to a playlist in their order of appearance on the CD. Assuming your encoder processes them in turn – most do – simply view the folder containing the MP3 files as a list, sorted by Date Modified or Date Created with the oldest file first. Then select all the files and drag them to the playlist.
Nicholas Ragaz

InDesign auto-recovery hell

TIP Adobe InDesign's auto-recover feature can be a lifesaver, unless it's trying to recover a large document. If a crash happens when you're working on a massive document, future attempts to start InDesign may result in a crash because of lack of memory. To work around this, open the InDesign folder and look for the InDesign Recovery folder. Open it and throw away all contents. Next, open InDesign by double-clicking the application icon – not by opening a document. Now you can choose Open from InDesign's File menu, select the document you want to open, select the Open Copy option at the bottom of the dialogue box, and click Open. A copy of the selected document opens, in the same condition as when you last saved it.
Justin Mayo

Infrared wake-up call
If you've selected IrDA in the AppleTalk control panel, you should know that the PowerBook (Bronze) won't go to sleep after a period of inactivity. Because the PowerBook must be awake for it to receive an infrared signal, it's smart enough to know not to nod off.

If you think you know better than the PowerBook and want to force it to sleep, select Sleep from the Special menu or press the Power key and choose Sleep in the resulting dialogue box.

The Mac OS should shed its tin-robot personality and get some humanity.

Desktop critic

David Pogue

DAVID POGUE is the author of *iMac for Dummies* (IDG Books Worldwide, 1998) and the *Great Macintosh Easter Egg Hunt* (Berkely Books 1998). He also wrote *Macs for Dummies,* fifth edition, updated for Mac OS 8, *The Weird Wide Web* (IDG Books Worldwide, 1997) and *The Microsloth Joke Book* (Berkeley, 1997). His most recent books are *Mac OS 9: The Missing Manual* and *iMovie: The Missing Manual* (both Pogue Press, 2000).

Pronouns dead

Upon marrying a surgeon, I discovered a surprising characteristic of doctors: when writing professionally, they write exclusively in the passive voice: "The patient was examined," not "I examined the patient"; "The wound was cleaned and dressed," not "I cleaned and dressed the wound"; and so on. It's as though 12 years of English-language class had never happened.

Imagine, then, the sense of irony I feel on realizing that exactly the same phenomenon haunts my other marriage – to the Mac. The otherwise elegant Mac OS is one giant, seething mass of awkward, passive-voice messages: "The document could not be printed"; "A folder cannot be replaced by a file"; and the immortal "The command could not be completed, because it could not be found".

Apple's problem: It's afraid to use pronouns. It doesn't want the computer, an inanimate object, to call itself "me" and you "you." Maybe avoiding "I" and "me" is Apple's way of ducking blame; maybe the programmers think that if they write "AppleTalk could not be opened" instead of "I couldn't open it," it won't occur to us that the computer caused its own problem.

Apple's writers twist themselves into knots trying to avoid pronouns, but there's simply no elegant way to do it. Sometimes they give up and just omit the I-word, resulting in a crude shorthand: "Could not update the settings." Unfortunately for them, God put pronouns on this earth for a reason; trying to write error messages that never refer to either you or the computer is like trying to write a novel without ever using the letter e.

It doesn't have to be this way. Plenty of error messages in other programs include pronouns with great success, and even manage to be entertaining.

The C Compiler in MPW (a Macintosh programming tool kit) gives you messages like this: "You can't modify a constant, float upstream, win an argument with the IRS, or satisfy this compiler." Or this: "Type in (cast) must be scalar; ANSI 3.3.4; page 39, lines 10-11. (I know you don't care, I'm just trying to annoy you)."

Or how about "This label is the target of a goto from outside of the block containing this label AND this block has an automatic variable with an initializer AND your window wasn't wide enough to read this whole error message."

Whoever wrote Eudora has a similar sense of humour. Its famous error messages include "That pesky MacTCP is acting up again" and "Memory is tight – live dangerously." Now, honestly, wouldn't you like the Mac OS a lot better if it exhibited that much personality? Not only would you not mind having encountered a glitch, you'd actually kind of like it.

Oh, all right, I know hell will freeze over before Apple writes funny error messages into the Mac OS. And Apple certainly does better than Microsoft, whose error messages sometimes lie outright. (Double-click on the CD-ROM icon when you don't have a disk inserted, and you're told that "The device is not ready.")

But I know a way Apple could fix its error-message problem without soiling its shiny corporate shoes: adopt an error-message philosophy like that of Citibank. It's worth standing behind a total stranger at a Citibank cash machine just to read the messages, which sound like a particularly worshipful butler. "Hello – how may I serve you?" it says when you first sign in. When you sign off, it says, "Thank you. It's always a pleasure to serve you." And if you get your password wrong, it takes the blame: "I'm sorry, I don't recognize that password" – not "That's not the right password, you idiot!"

Well, we know it's just an inanimate piece of software – but darn it, you walk away from that cash machine with a spring in your step. You feel good about yourself, having given that little machine a chance to take pride in a job well done. Apple thinks people love their Macs now? If it introduced pronouns and a little bit of humility into its error messages, people would not just love their Macs – they'd prostrate themselves in a religious frenzy.

Only one solution would make a better fit with Apple's artistic sensibility: to write all error messages in the ancient Oriental verse-form, haiku. In 1996, Salon.com's contest to write haiku error messages showed us just how much better the world would be if error messages went along the lines of this one by reader David Dixon:

Three things are certain:
Death, taxes, and lost data.
Guess which has occurred.